SNK RAID Series
NVR User Guide

Sysvideo Technology Limited

Only For SNK 8, 16 HDD series RAID NVR

Version 02

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Intended Audience

This document is intended for the personnel who:

- Work with SNK 8/16 HDD RAID series Network Video Recorders (NVRs)
- Know video surveillance basics

Document Versions

Version 02 (2015-04-03)

Compared with Version 01 (2014-08-30), Version 02 (2015-04-03) includes the changes described in the following table.

Change Type	Description
Feature change	Added the specifications of the SNK1600RD-I.
Editorial change	Updated screenshots.

Version 01 (2014-08-30)

Compared with Version 00 (2014-06-30), Version 01 (2014-08-30) includes the changes described in the following table.

Change Type	Description
Feature change	Added the functions and specifications of the SNK16000 series..
Editorial change	Updated screenshots.

Version 00 (2014-06-30)

This is a draft.

Compatibility

The following table provides the products and NVR software version to which this document applies.

Product	SNK series 8/16 HDD RAID NVR
NVR Software Version	NVR V5R1B2

1 About SNK RAID series enterprise NVRs

1.1 Product Introduction

Sysvideo SNK RAID series enterprise NVR is a turnkey solution for video surveillance and video recording. SNK RAID series enterprise NVRs support Open Network Video Interface Forum (ONVIF) and Real Time Streaming Protocol (RTSP) interoperability standards. Additionally, SNK RAID series enterprise NVRs feature native integration to cameras and encoders from third party manufacturers, therefore making them an open system.

The advanced system capabilities make SNK RAID series enterprise NVRs easy to use with functions like Automatically Adding Devices and One-Click Partition and Initialization and meet various customer needs with functions like Record Fragment and Privacy Mask for every day security users to advanced video surveillance users.

SNK RAID series enterprise NVRs work with the following management system and applications:

- NVR Station: is a complete system for device management, video surveillance, and video recording.
- NVR Station Web: is a web-based application of the NVR Station.
- Mobile NVR Client (MNC): is an iOS/Andriod-compatible mobile application of the NVR Station.

For details about SNK RAID series enterprise NVR appearance and specifications, see chapter 8 "Specifications."

Note

In this document, the NVR refers to a SNK RAID series enterprise NVR.

1.2 Key Features

The following table lists key features provided by SNK RAID series enterprise NVRs to meet vairous customer needs.

Item	Feature	Description
Adding devices	Automatically Adding Devices	This feature allows you to quickly add cameras to your NVR. This feature is available to all SNK RAID series enterprise NVRs. For details on how to use this feature, see section

Item	Feature	Description
		3.1 "Automatically Adding the Target Camera."
Disk management	One-Click Partition and Formatting	Before starting a recording, you must partition and format disks. With this feature, you can complete the two operations with one click. This feature is available to all SNK RAID series enterprise NVRs. For detais on how to use this feature, see section 4.1 of *SNK RAID series enterprise NVR Administrator Guide*.
Viewing	Dual-Stream and Audio	SNK RAID series enterprise NVRs offer the ability to record the main and secondary streams for each camrea. Along with exceptional image quality, these NVRs can also record audio. This feature is available to all SNK RAID series enterprise NVRs.
	Dual/Triple-Monitor Live Viewing	The SNK0800RD can connect to two monitors, allowing for dual-monitor live viewing. The SNK1600RD can connect to three monitors, allowing for triple-monitor live viewing. For feature details, see section 3.8 "Enabling Dual/Triple-Monitor Viewing." Note: For the SNK16128RD, you cannot use the dual/triple-monitor viewing feature if you already create RAID arrays. In other words, you cannot create RAID arrays if you already use the dual/triple-monitor viewing feature.
	Privacy Mask	This feature prevents a camera from monitoring sensitive objects or areas in a scene. When privacy masks are created in a scene, you cannot track objects if the objects move to a masked area. You can create up to 4 privacy masks (24 privacy blocks) for a camera. This feature is available to all SNK RAID series enterprise

Item	Feature	Description
		NVRs. For details on how to use this feature, see section 3.5 "Setting Privacy Masks."
	Image Flip	This feature allows you to track an object continuously as it passes beneath a camera. This feature is available to all SNK RAID series enterprise NVRs. For details on how to use this feature, see section 3.3.2 "Advanced PTZ Controls."
Playback	16-Channel 1080p Video Playback	A spectacular 1920x1080 resolution lets you see more of your high-resolution images with pixel-for-pixel accuracy. When you play back videos on a screen, the solution allows you to capture more details. This feature is available to all SNK RAID series enterprise NVRs.
	Record Fragment	This feature breaks one piece of record into several parts and plays these parts at the same time. This feature is available to all SNK RAID series enterprise NVRs. For details on how to use this feature, see section 5.1 "Multi-Record Playback."
Alarming	Motion Detection	With this feature, an NVR can detect a change in the position of an object relative to its surroundings. This feature is available to all SNK RAID series enterprise NVRs. For details on how to use this feature, see section 6.1 "Motion Detection."
	E-Mail Notification	Alarm notification via an e-mail alert is offered as a standard feature with all Sysvideo NVRs. You can program an NVR to send a message to a designated address whenever an alarm is triggered. This feature is available to all SNK RAID series enterprise NVRs. For feature details, see section 7.5 "E-Mail

Item	Feature	Description
		Notification."
Storage	ANR	The automatic network replenishment (ANR) feature enables an IP camera to locally save records when the connection between it and the NVR is broken and send the records to the NVR when the connection is resumed. This feature is available to all SNK RAID series enterprise NVRs. For details on where to enable this feature, see section 4.3 "Setting the Recording Policy."

1.3 Major Specifications

Resolution of 3840x 2160

The SNK1600RD provide a resolution of 3840 x 2160, allowing you to see a more detailed picture compared with a resolution of 1920 x 1080.

Homing

From a single NVR, you can view and control up to 128 cameras.

WDR

This feature allows you to record greater scene details, from shadows to highlights than normal.

IR

Infrared cameras can capture objects when there is insufficient visible light to see.

Three-Megapixel Lens

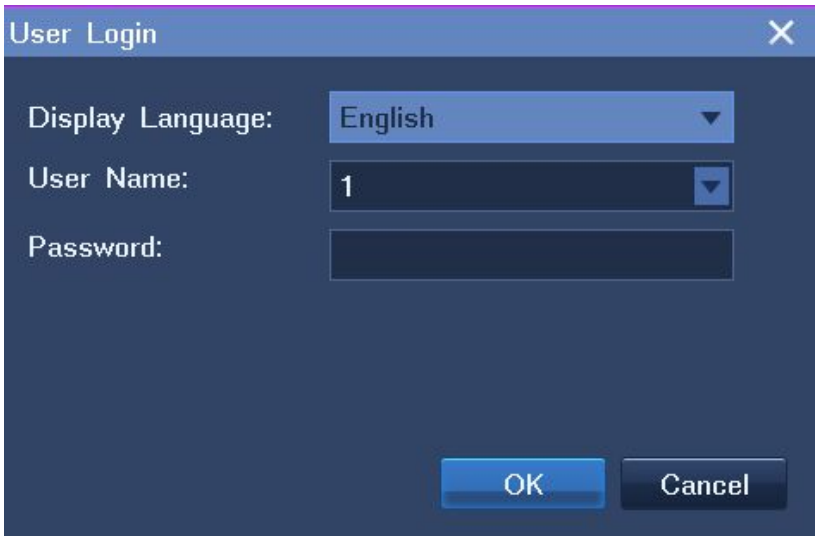
SNK RAID series enterprise NVRs can work with three-megapixel lenses so that you can capture stunning nad high-resolution digital images.

2 Logging In to the NVR

Before logging in to the NVR, ensure that your system administrator has assigned you a user account.

To log in to the NVR:

1. Click any button on the control panel located at the bottom of the main screen of the NVR.
2. In the displayed **User Login** dialog box, specify **User Name** and **Password**.



   In this step, you can select a display language.

3. Click **OK**.

If you enter an incorrect password three times in succession, your account will be locked for 10 minutes.

If you forget your password, contact your system administrator to retrieve the default password of your account.

Note

The graphical user interface (GUI) of the NVR is continuously changed. Therefore, do not be alarmed when you find the screenshots in this document are different from actual ones. We greatly appreciate your understanding.

All the screenshots in this document are taken from the SNK1600RD. If you find some options are missing, contact the NVR system administrator to check whether your NVR supports these options. If so, contact the local authorized Sysvideo agent.

3 Monitoring a Site

3.1 Automatically Adding the Target Camera

You can use the Automatically Adding Devices feature to add the target camera that is monitoring the target site to your NVR.

Working principle of the feature

This feature automatically adds a camera to an NVR when the following conditions are true:

- The registration address of the camera is 224.1.1.1 (the default registration address).
- The camera is located on the same subnet as the NVR.
- The Auto Networking feature is enabled on the camera side.
  For details on how to enable this feature on the camera side, see the related document of the camera.

Alternatively, this feature can add the camera to the NVR when the following conditions are true:

- The registration address of the camera is one IP address of the NVR. (This indicates that the camera has registered with the NVR.)
- The camera can reach the NVR.

This feature can also retrieve a camera that registered with the NVR but was preempted by another NVR later if the following conditions are true:

- The camera is still on the camera list of the NVR.
- The camera is located on the same subnet as the NVR.

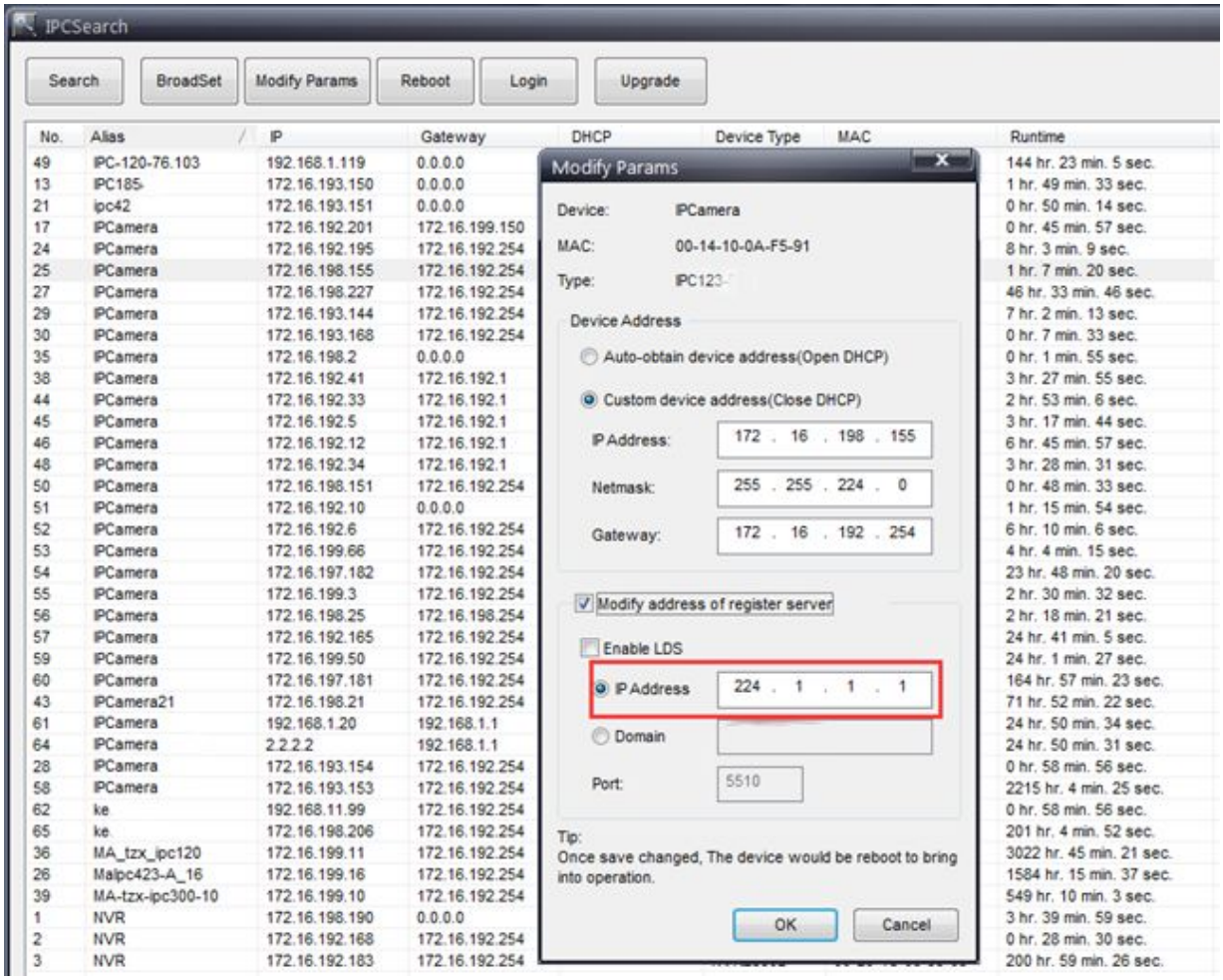
After the target camera is added to your NVR, you can find the camera on the camera list. Then, drag the target camera to a view window on the main screen of your NVR to monitor the target site.

Note

The registration address of a camera is one IP address of the NVR to which the camera registers.

Querying the registration address of a camera

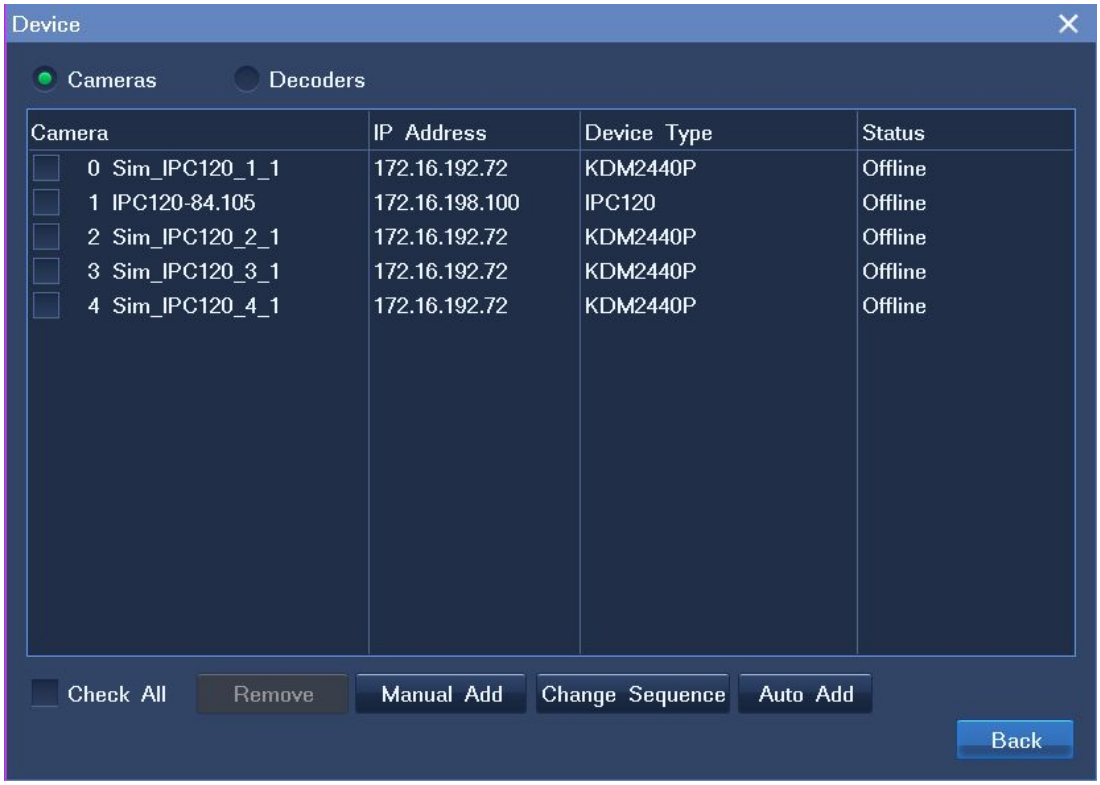
You can use IPCSearch to query the registration address of a camera. The following is an example.



IPCSearch is incorporated into the NVR Station. IPCSearch only can find specific series devices that are located in the same broadcast domain as your personal computer (PC). It don't support ONVIF camera searching.

How to use this feature

To use this feature, choose **Main Menu** > **Device** > **Auto Add**, as shown in the following figure.



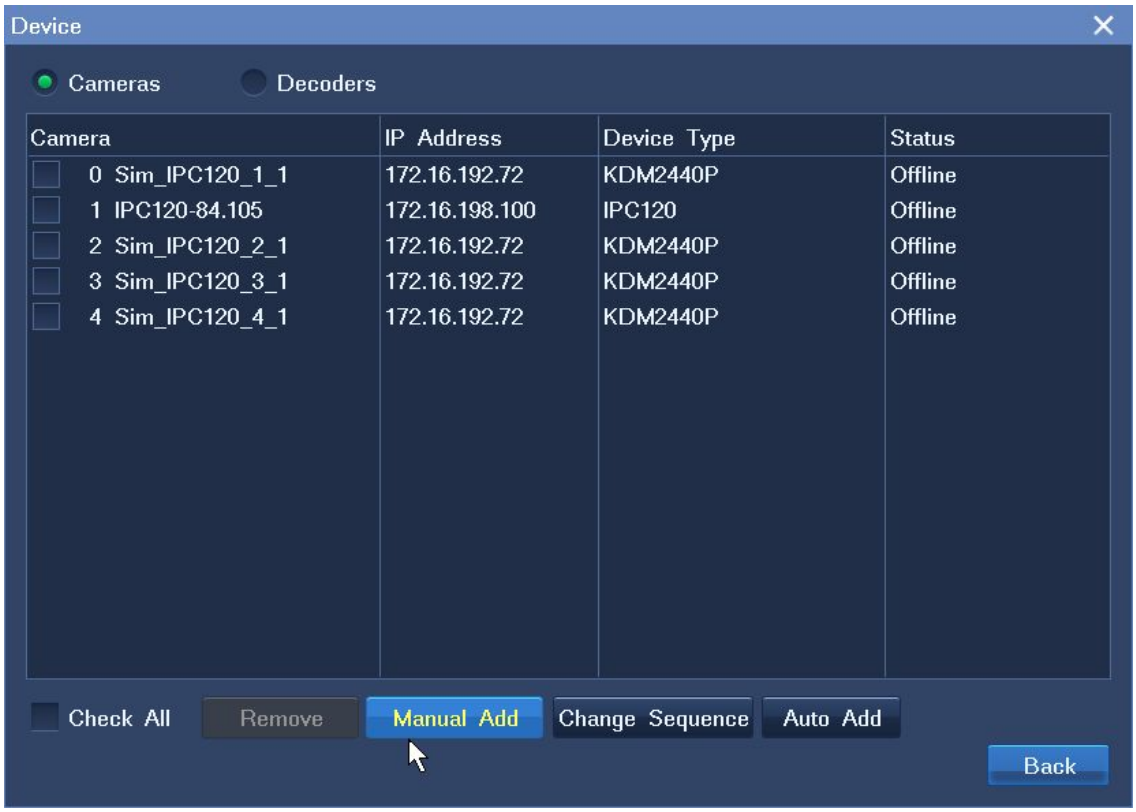
If you do not want use this feature, you can manually search for and add the target camera. For details, see section 3.2.1 "Adding Cameras."

3.2 Manually Adding, Editing, Replacing, and Deleting Cameras

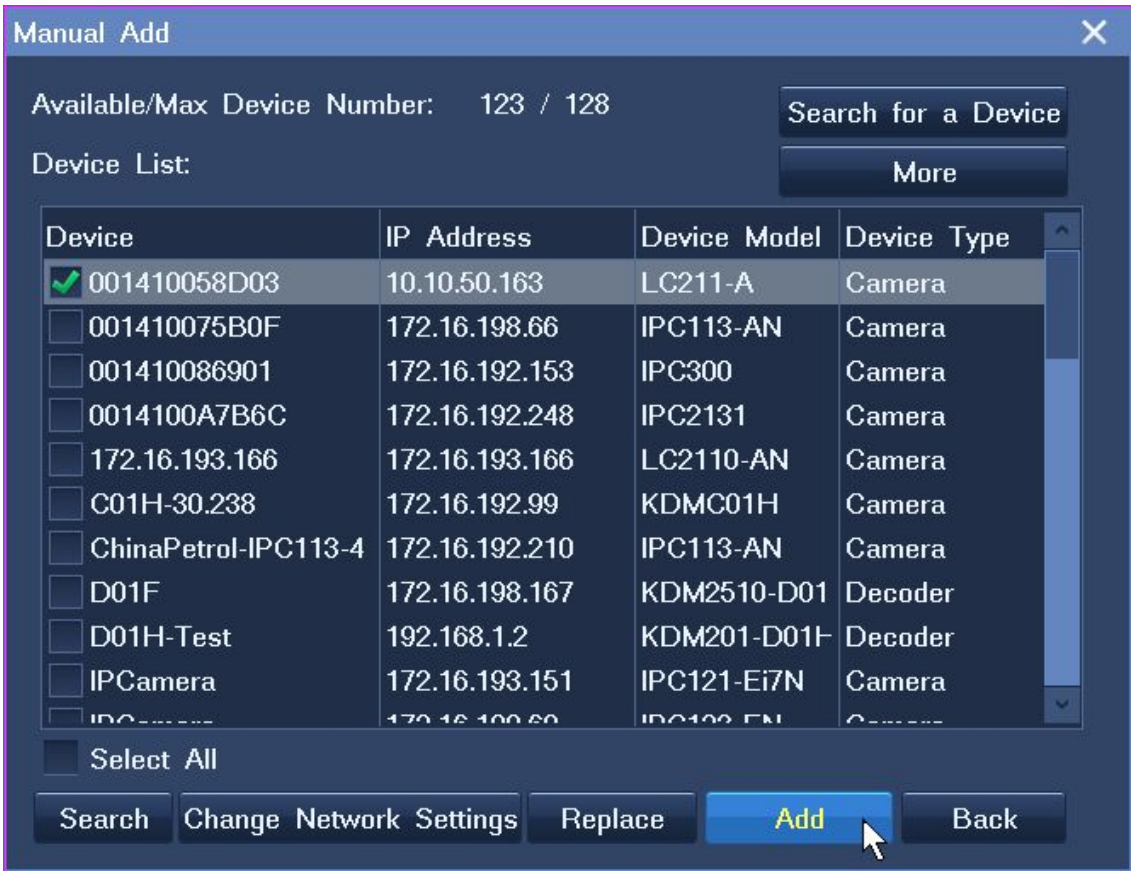
3.2.1 Adding Cameras

To manually add a camera:

1. Choose **Main Menu** > **Device** > **Manual Add**, as shown in the following figure.



2. Select the camera from the search results and click **Add**, as shown in the following figure.



3. (Optional) Click **Search for a Device** and specify parameters to add an RTSP or ONVIF camera, as shown in the following figure.

After the preceding operations are performed, the camera is added to the camera list of the NVR. Then, move your cursor to the left edge of the main screen and drag the camera to a view window to monitor the corresponding site.

3.2.2 Editing Cameras

To change the network settings of a camera:

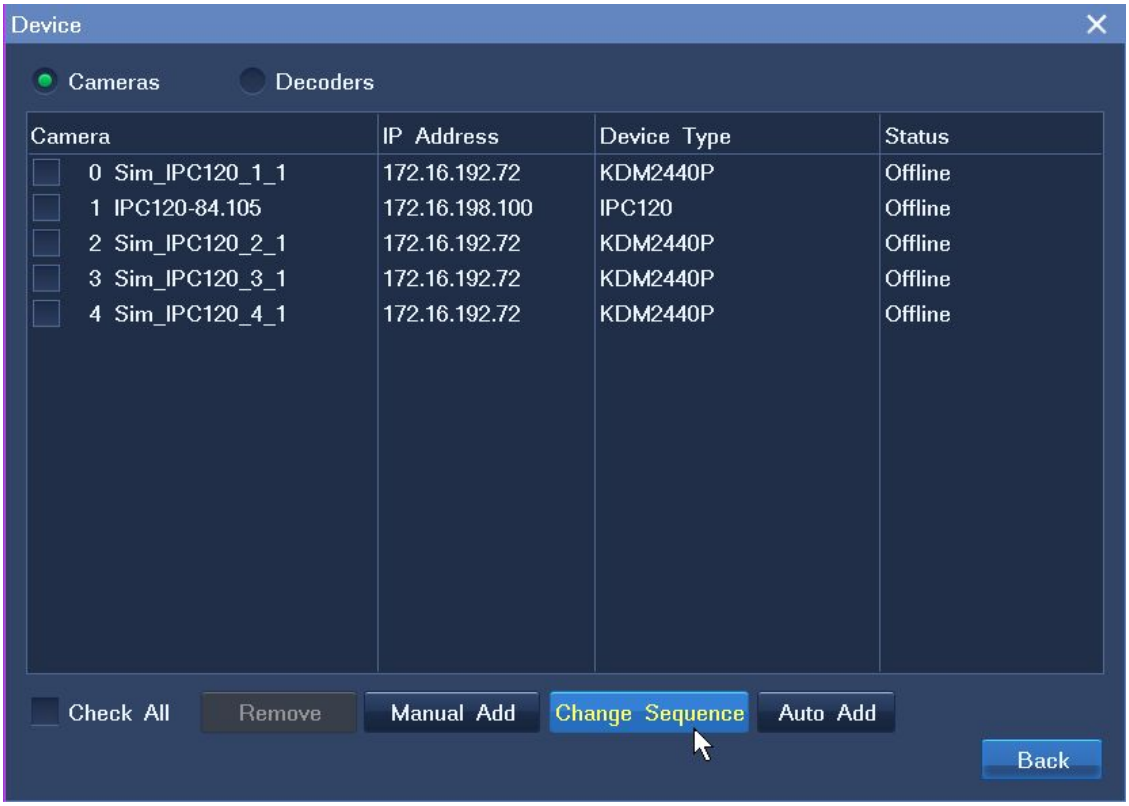
1. Choose **Main Menu** > **Device** > **Manual Add**.
2. Select the camera from the search results and click **Change Network Settings**.

3. Change parameter values as required.
4. Click **OK**.

Note that you can change the network settings only for cameras that use the factory defaults.

To change the sequence of a camera on the camera list of the NVR:

1. Choose **Main Menu** > **Device** > **Change Sequence**.



2. In the displayed dialog box, enter a digit in the text box, as shown in the following figure.

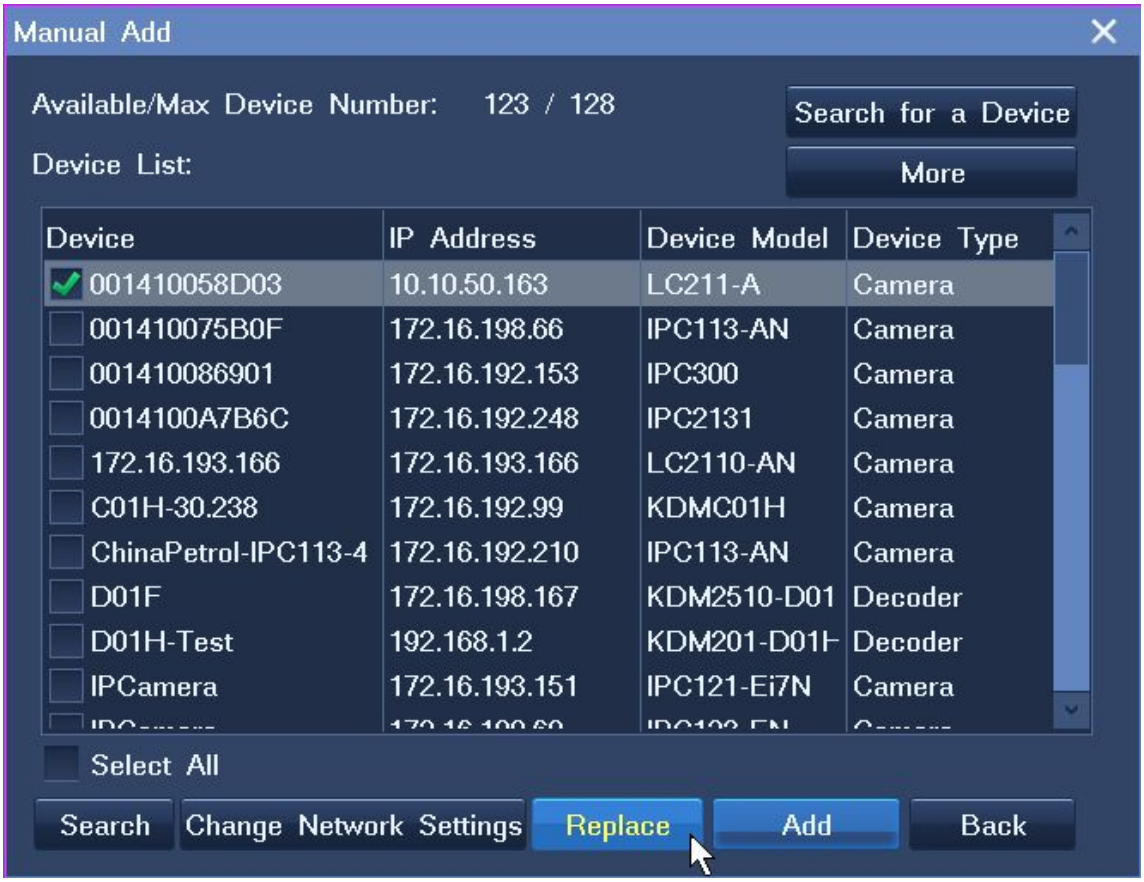
3. Click **OK**.

3.2.3 Replacing Cameras

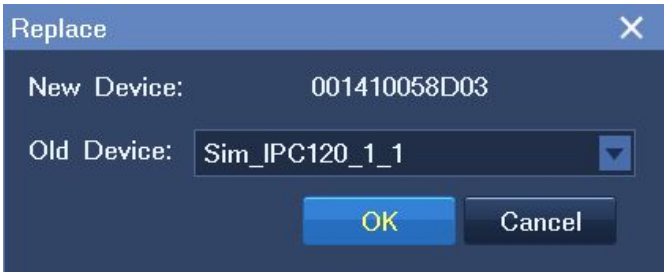
To replace an existing camera with a new camera:

1. Choose **Main Menu** > **Device** > **Manual Add**.

2. In the displayed **Manual Add** dialog box, select the camera from the search results and click **Replace**, as shown in the following figure.



3. In the displayed **Replace** dialog box, select an old device.



4. Click **OK**.

3.2.4 Deleting Cameras

To delete a camera:

1. Choose **Main Menu** > **Device**.

2. In the **Device** dialog box, select the camera from the camera list and click **Remove**.

3. In the displayed dialog box, click **Yes** to confirm your operation.

3.3 PTZ Controls

When you are monitoring a site, you can use PTZ controls to look around your surveillance site.

3.3.1 Common PTZ Controls

Common PTZ controls are described as follows:

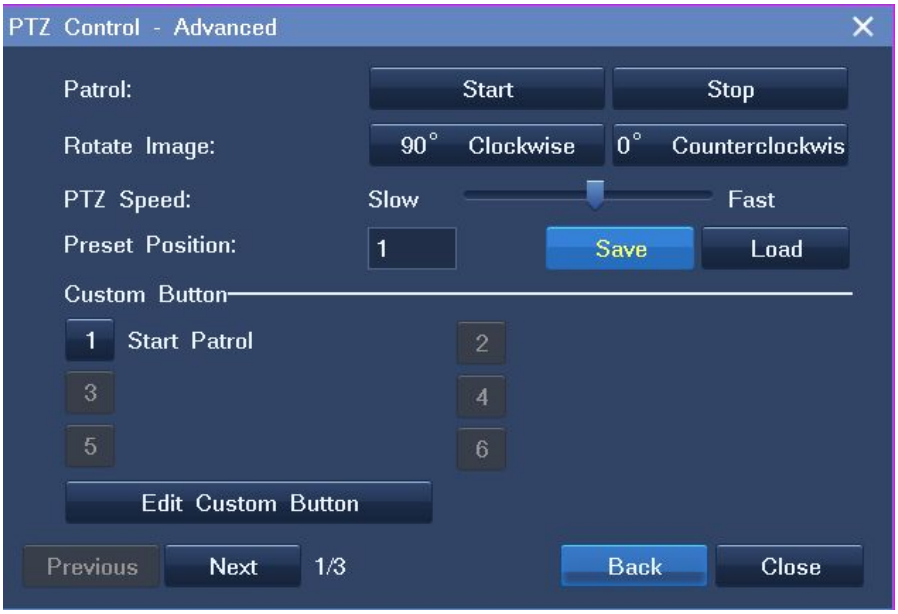
Option	Description
Zooming	Click to zoom in and to zoom out.
Adjusting the Brightness	Click or to increase or decrease the display brightness, respectively.
Adjusting the Focus	Click or for near or far focus, respectively. Click for autofocus.
Camera Control Menu	Click , , and to show, enter, and exit the camera control menu, respectively. These buttons apply only to specific cameras.
Turning on or off the Backlight	Click or to turn on or off the backlight, respectively.
Day and Night Mode	Click or to enable or disable the day and night mode, respectively. Click to enable the automatic day and night mode.
Wide dynamic range (WDR)	Click or to enable or disable the WDR technique, respectively.

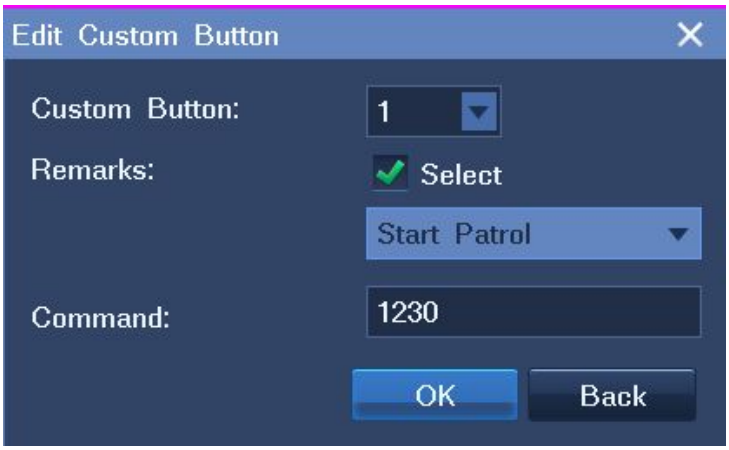
Note

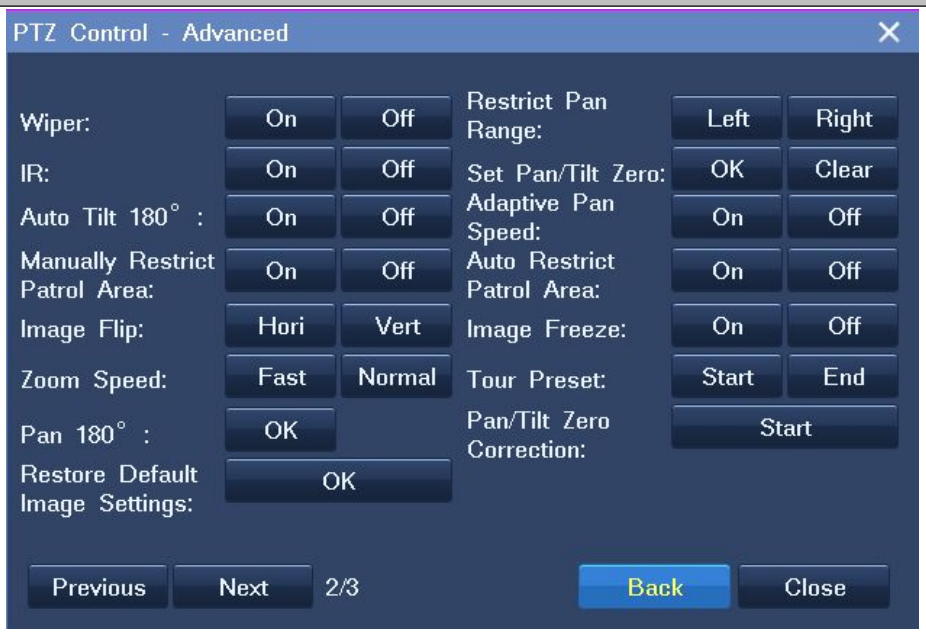
If you find an option does not take effect, contact the system administrator to check whether the camera in question supports the option. If the option is supported, contact the local authorized Sysvideo agent.

3.3.2 Advanced PTZ Controls

Click the **Advanced** button to show advanced PTZ controls, which are described as follows.

Option	Operation
Patrol	This option enables a camera to continuously pan. Click **Start** to start patrolling your surveillance site and **Stop** to stop the patrol. 
Rotate Image	Each time you click **90° Clockwise**, the image will be rotated 90° clockwise. Each time you click **90° Counterclockwise**, the image will be rotated 90° counterclockwise.
Preset Position	Click **Save** to save the current position as a preset position. When the camera moves to another position, you can enter a preset position in the text box and click **Load** to move the camera to the preset position.
Custom Button	These buttons are for command strings. Clicking one button will enable the NVR to send a command to a camera and the camera will execute the command.

Option	Operation
	To edit a custom button: 1. Click **Edit Custom Button**. 2. In the displayed dialog box, specify parameters displayed.  3. Click **OK**. Note that these commands are proprietary commands. Therefore, when specifying the **Command** parameter, you must negotiate with the system administrator of the camera in question.
Wiper	You can use the wiper to clean a lens. This option requires that the corresponding camera be equipped with a wiper.
IR	Infrared camreas can capture objects when there is insufficient visible light to see. This option requires that the corresponding camera support IR.
Auto Tilt 180°	The Auto Tilt 180° feature works as follows: When you press and hold to enable a camera to tilt down to the maximum tilt angle 90°, it quickly pans 180° and tilts upward. If you still hold , the camera can tilt upward to the maximum tilt angle 90° again. This achieves 180° tilting. Click **On** to enable this feature.

Option	Operation
	
Manually Restrict Patrol Area	When two borders are configured through **Restrict Pan Range** and this option is selected, the corresponding camera pans between these borders. If the camera reaches either of these borders, clicking or cannot move the camera any further. This option requires that two borders on the horizontal plane have been configured through **Restrict Pan Range**.
Image Flip	Click **Horizontally** to horizontally flip the video image 180° and **Vertically** to vertically flip the video image 180°.
Zoom Speed	Click **Fast** to accelerate the zoom speed and **Normal** to use the normal zoom speed.
Pan 180°	Click **OK** to enable a camera to pan 180°.
Restrict Pan Range	This option allows you to set two borders on the horizontal plane. Then, the camera cannot move beyond these borders. To set two borders on the horizontal plane: 1. Right-click a view window and choose **PTZ Control**. 2. Click and hold to move the camera leftwards and stop at a position. 3. Click and go to the second page. 4. Click **Left** next to **Restrict Pan Range** to save the previous position as the left border.

Option	Operation
	5. Click **Back** 6. Click and hold to move the camera rightwards and stop at a position. 7. Click and go to the second page. 8. Click **Right** in the same row as **Restrict Pan Range** to save the previous position as the right border. 9. Click **Close**.
Set Pan/Tilt Zero	With this option, you can create a virtual zero point (the pan/tilt is zero). After you create a virtual zero point for a camera, the camera moves to the virtual zero point upon the power-on. To create a virtual zero point for a camera: 1. Right-click the corresponding view window and choose **PTZ Control**. 2. Select a position for the camera using , , , and . 3. Click and go to the second page. 4. On the second page, click **OK** next to the **Set Pan/Tilt Zero** option, as shown in the following figure.

Option	Operation
	To clear a virtual zero point for a camera: 1. Right-click the corresponding view window and choose **PTZ Control**. 2. Click and go to the second page. 3. On the second page, click **Clear** next to the **Set Pan/Tilt Zero** option.
Adaptive Pan Speed	When you select this option, the panning speed is adaptive.
Auto Restrict Patrol Area	This option restricts the patrol area for a camera. Before selecting this option: 1. Set two borders on the horizontal plane through **Restrict Pan Range**. 2. Start a patrol though **Patrol**. After you select this option, the corresponding camera patrols the area with the previous borders. This option requires that two borders on the horizontal plane have been configured through **Restrict Pan Range**.
Image Freeze	This option freezes the last key frame received from a camera. In such a case, you can see the current image is frozen.
Tour Preset	This option tours preset positions. By default, the dwell time for each preset position is 10s. Note that the dwell time is unconfigurable. Note that this option requires that preset positions have been configured.
Pan/Tilt Zero Correction	This option sets the pan/tilt setting to the mechanical zero point.
Restore Default Image Settings	Click **OK** to restore the default image settings.

Note

If you find you cannot use an option, contact the system administrator to check whether the camera in question supports the option. If the option is supported, contact the local authorized Sysvideo agent.

3.4 e-PTZ

The electronic PTZ (e-PTZ) function allows you to digitally zoom in or out.

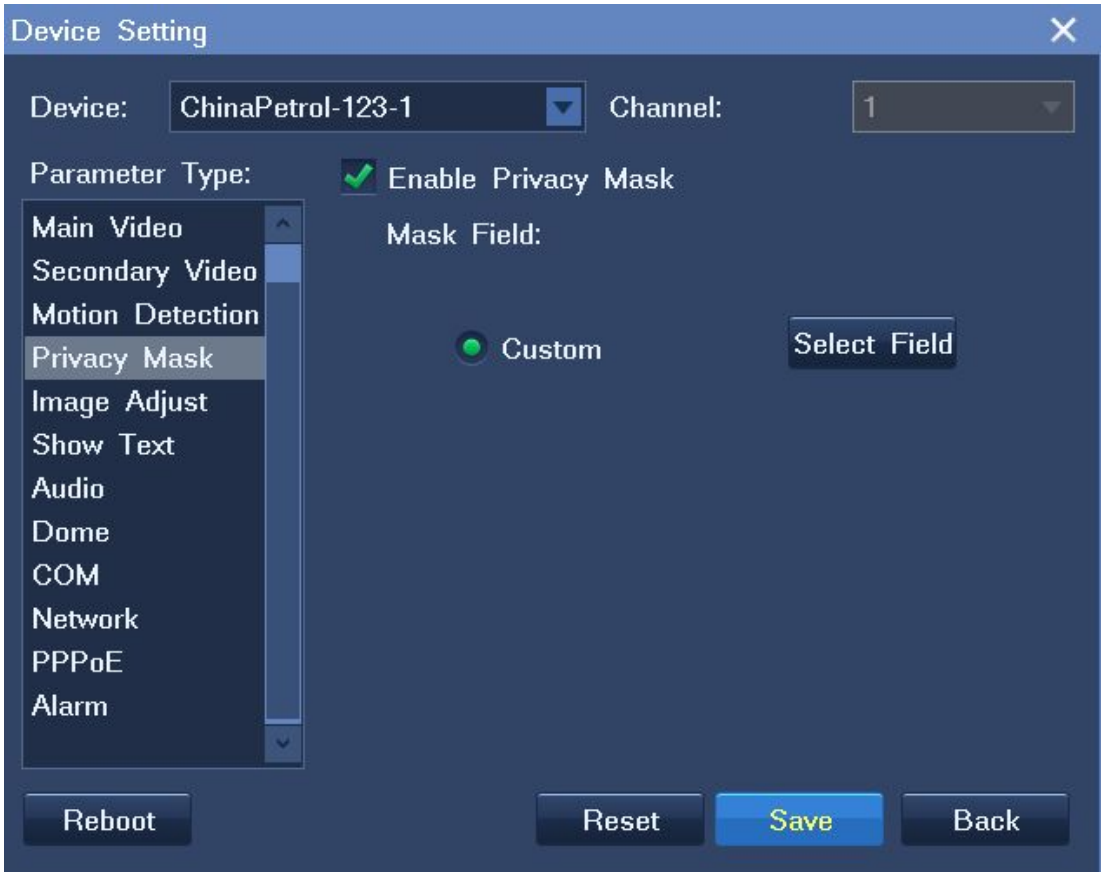
3.5 Setting Privacy Masks

The privacy mask feature prevents a camera from monitoring sensitive objects or areas in a scene. When privacy masks are created in a scene, you cannot track objects if the objects move to a masked area. Therefore, you are advised to disable this function when you are tracking moving objects.

You can create up to 4 privacy masks (24 privacy blocks) for a camera.

To create a privacy mask for a camera:

1. Right-click the corresponding view window and choose **Device Setting** > **Privacy Mask** > **Enable Privacy Mask**, as shown in the following figure.



2. Click **Select Field** and then select **privacy blocks.**
3. Click the button in the bottom right corner of the window and confirm your operation.
4. Click **Save** and then **Back**.

After the preceding steps are performed, you will find that masked fields turn black.

3.6 Changing and Touring Surveillance Sites

To change the surveillance site:

1. Right-click the current view window and choose **Select Camera**.
2. Click the target camera and then **OK**.

To tour multiple surveillance sites on a view window:

1. Right-click a view window and choose **Advanced** > **Tour Camera**, as shown in the following figure.

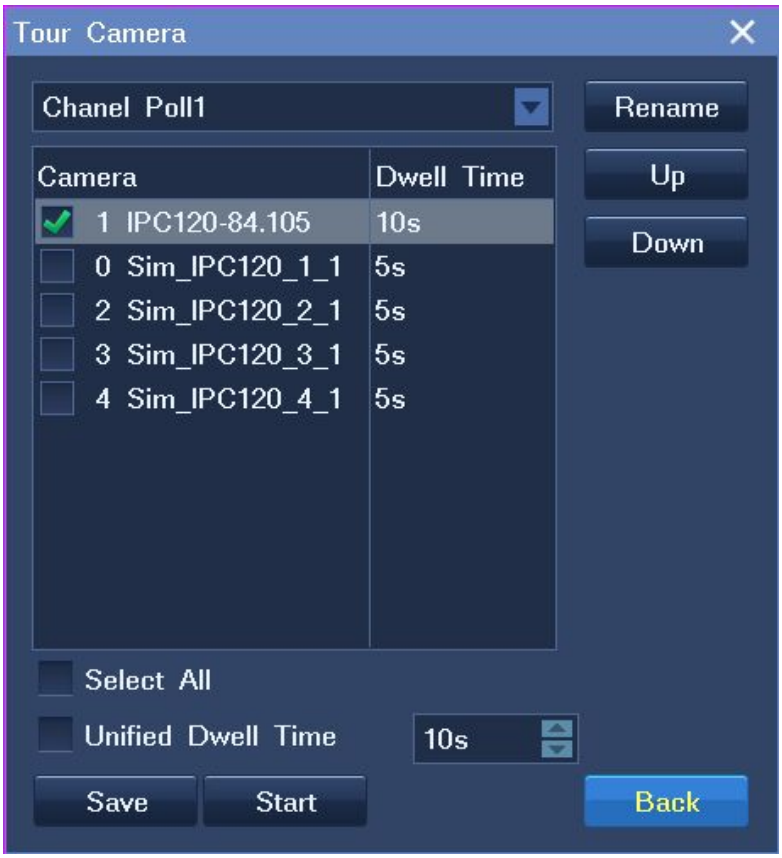
2. Select a touring scheme.

   By default, the first touring scheme (Chanel Poll1) is selected, as shown in the following figure.

3. Select cameras for the touring scheme. These cameras are to be toured.
4. Enter a dwell time for cameras.

   You can enter either a unique dwell time for each camera or a unified dwell time for several cameras.

   To enter a unique dwell time for a camera, select the camera and select a time length from the **Unified Dwell Time** drop-down list, as shown in the following figure.

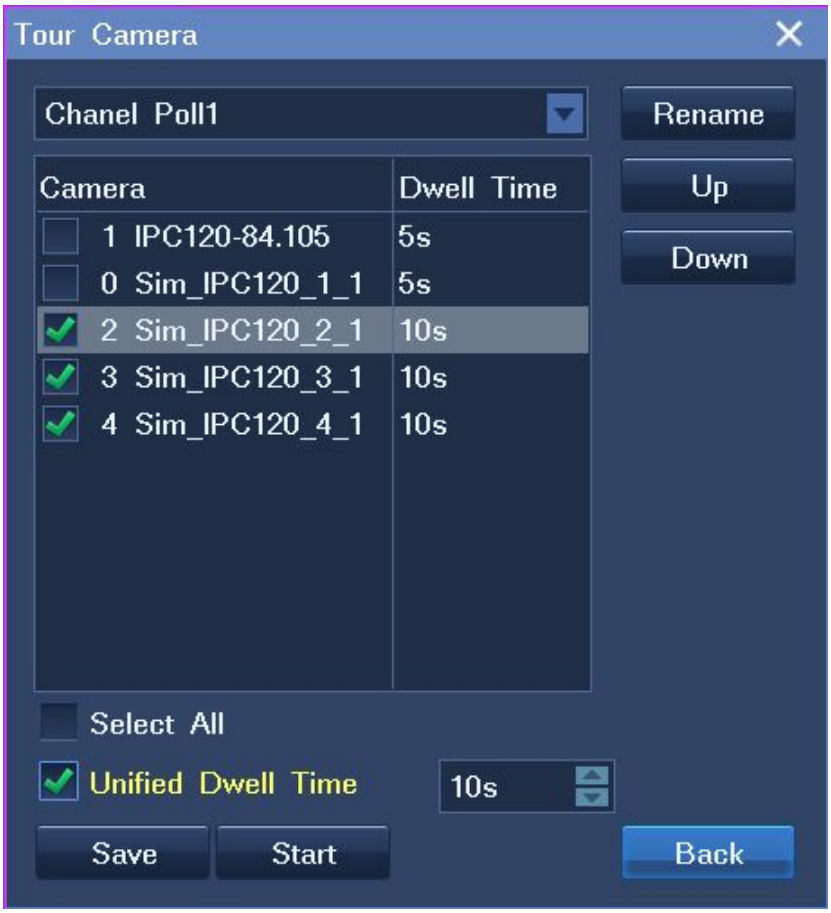


To enter a unified dwell time for several cameras:

1) Select these cameras.

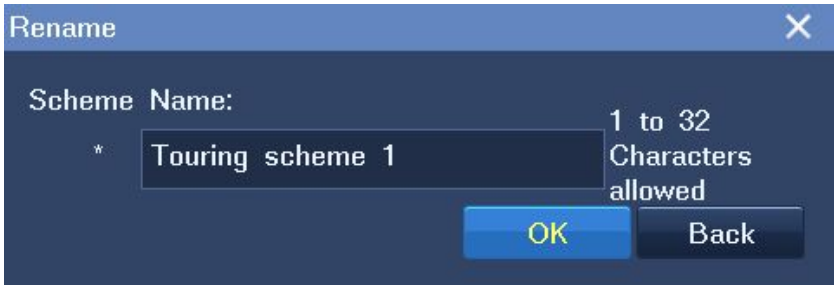
2) Click **Unified Dwell Time** and select a time length from the **Unified Dwell Time** drop-down list.

The following is an example.



5. (Optional) Change the order for each camera using the **Up** and **Down** buttons.
6. (Optional) Click **Rename** to rename the current touring scheme.

   The following is an example.



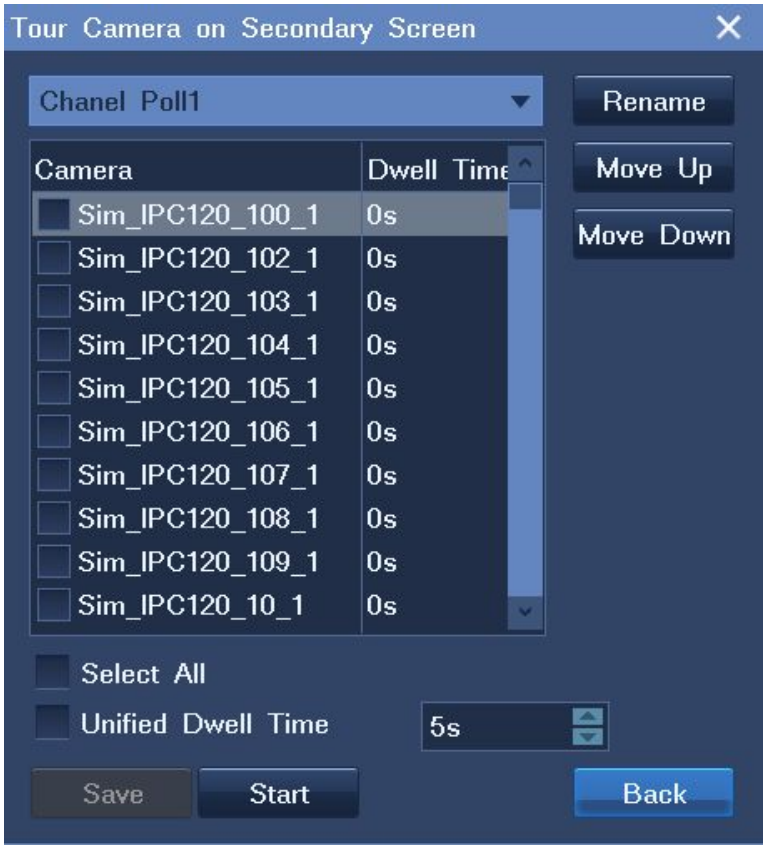
7. Click **Start** and then **Back**.

After the preceding steps are performed, live videos from these surveillance sites are toured on the view window.

To tour multiple surveillance sites on a secondary screen:

1. Right-click a view window and choose **Advanced** > **Tour Camera on Secondary Screen** > **HDMI2** or **VGA**.

2. In the displayed dialog box, select a touring scheme. By default, the Channel Poll1 scheme is selected, as shown in the following figure.



3. Select cameras for the touring scheme. These cameras are to be toured.

4. Enter a dwell time for cameras.

   You can enter either a unique dwell time for a camera or a unified dwell time for several cameras.

5. (Optional) Change the order for each camera using the **Move Up** and **Move Down** buttons.

6. (Optional) Click **Rename** to rename the current touring scheme.

7. Click **Start** and then **Back**.

3.7 Setting and Touring Screen Layouts

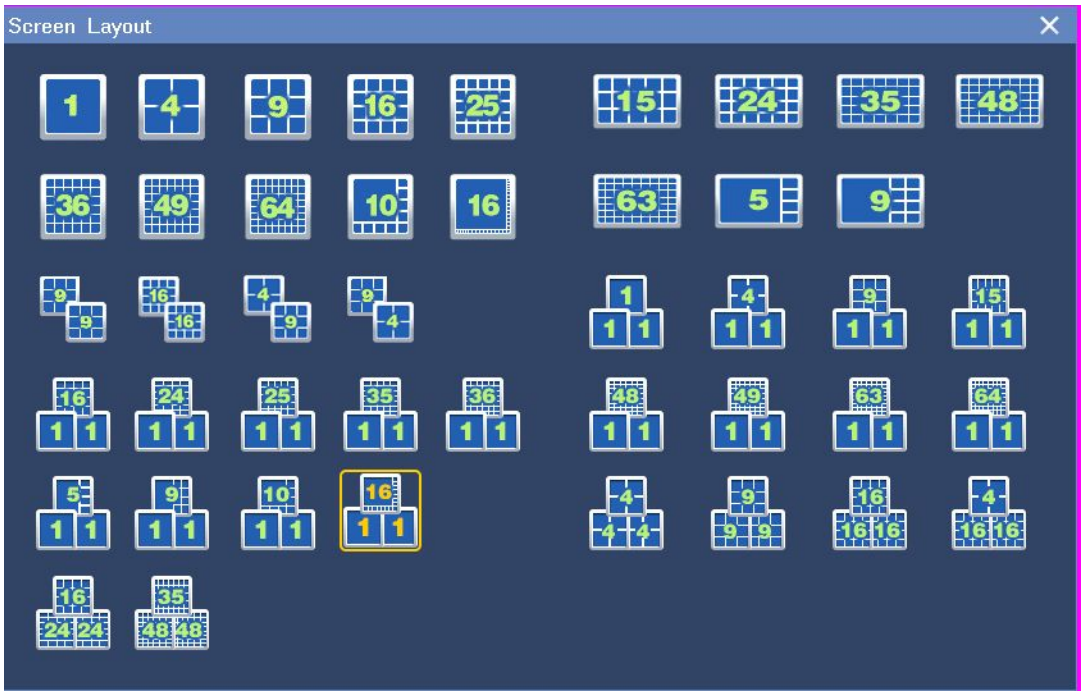
When multiple view windows are displayed on the main screen, you can set the screen layout, create a screen layout scheme with cameras bound to view windows, and tour screen layout schemes.

To set the screen layout, do as follows:

1. Right-click a view window and choose **Screen Layout**.

2. Choose a layout or click **More**.

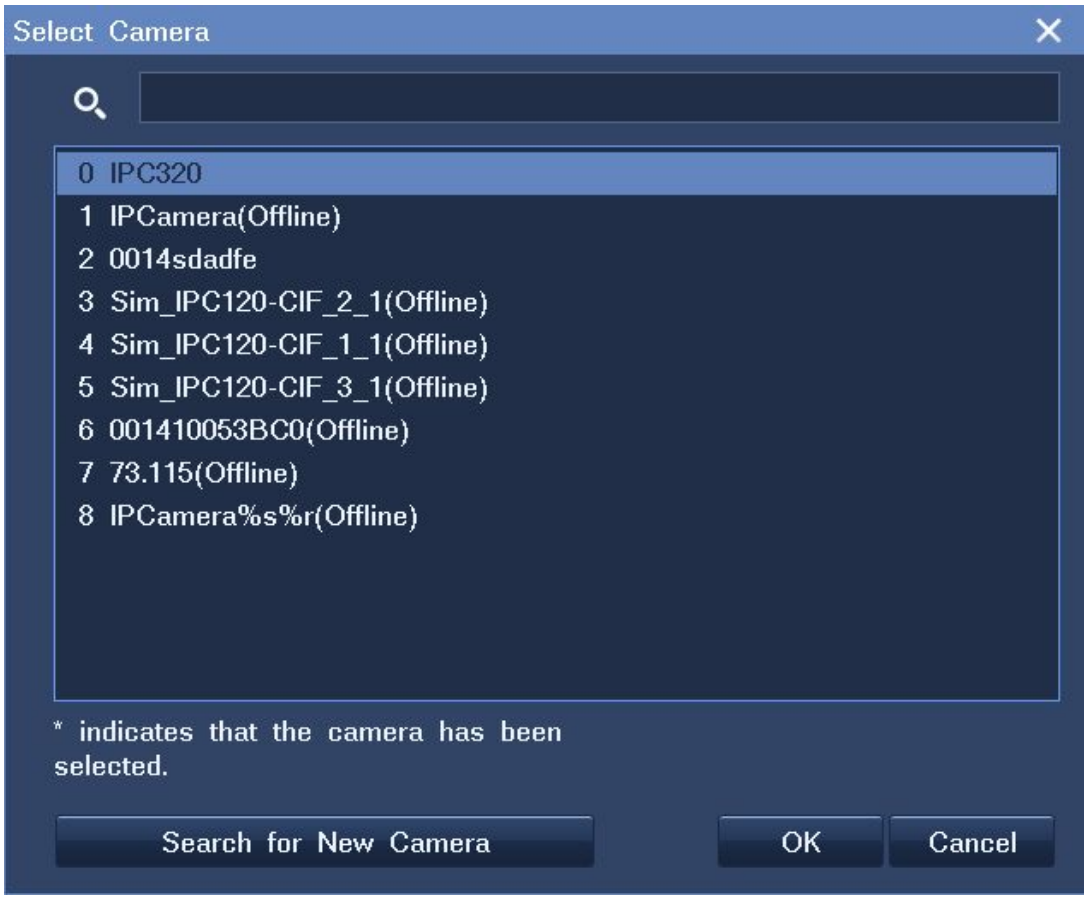
   Then, you will see the following.



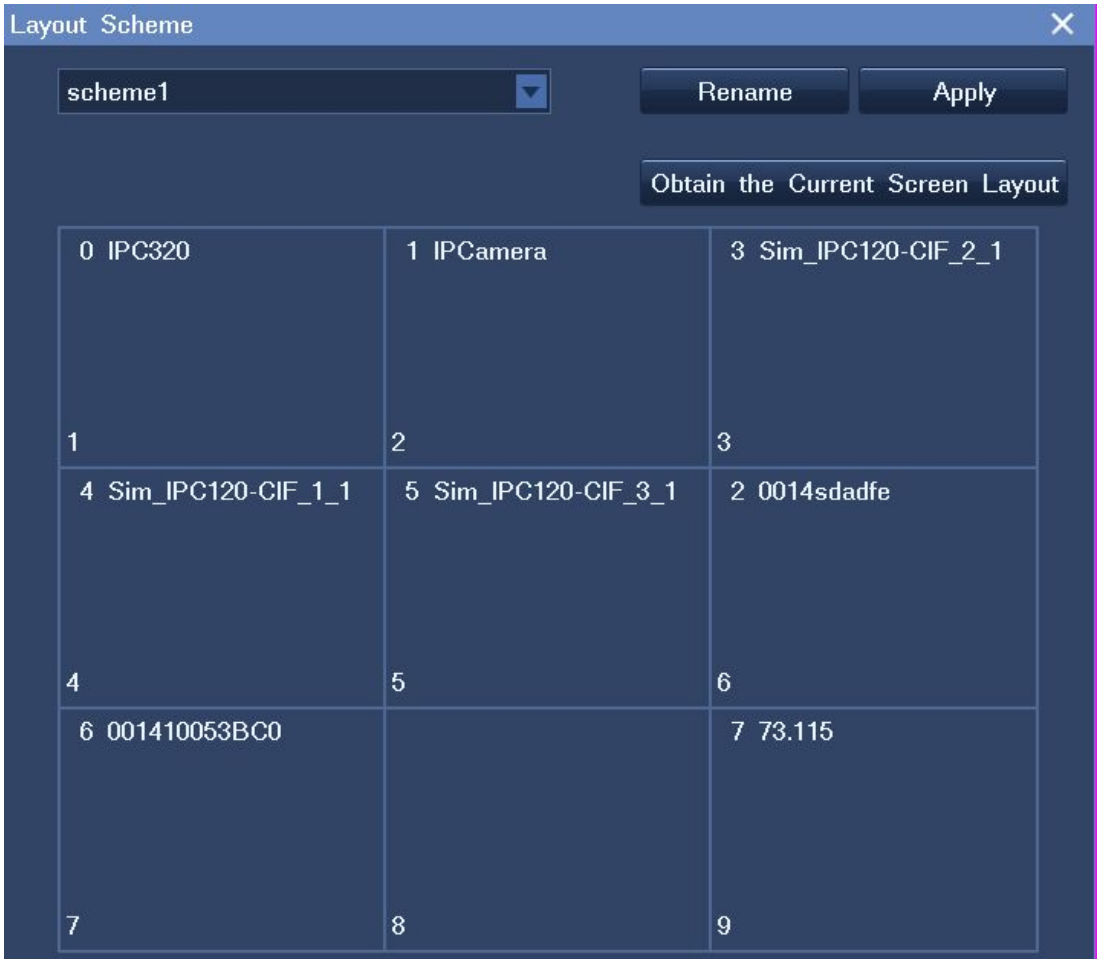
   You can also set the screen layout for the secondary screen in this dialog box.

To create a screen layout scheme with cameras bound to view windows, do as follows:

1. Determine a screen layout by performing the previous two steps.
2. Bind cameras and view windows.
   1) Right-click a view window and choose **Select Camera**.
   2) Click the target camera. Alternatively, click **More** to find the target camera, as shown in the following figure.



3. Right-click a view window and choose **Layout Scheme**.
4. In the displayed dialog box, click **Obtain the Current Layout**, as shown in the following figure.



5. (Optional) Click **Rename** to rename the current layout scheme.

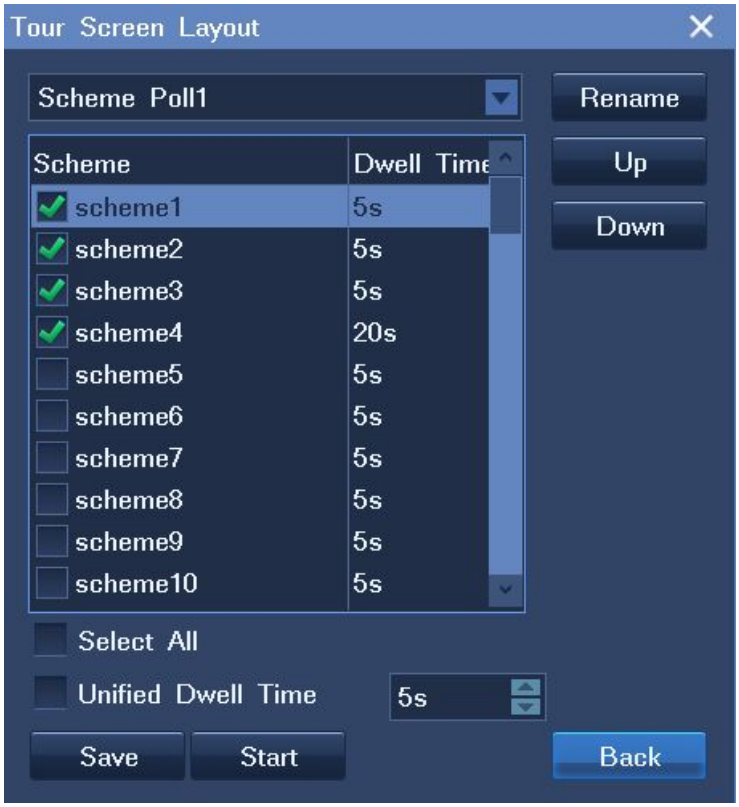
   The following is an example.

6. Click **Save**.

To tour screen layout schemes, do as follows:

1. Right-click a view window and choose **Advanced** > **Tour Screen Layout**.
2. Select layout schemes to be toured and enter a dwell time.

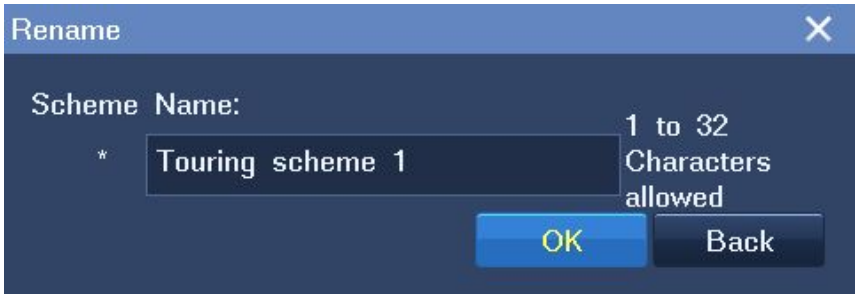
The following is an example.



You can change the order for each scheme using the **Up** and **Down** buttons.

3. (Optional) Click **Rename** to rename the current touring scheme.

   The following is an example.



4. Click **Start** and then **Back**.

3.8 Enabling Dual/Triple-Monitor Viewing

Enabling the feature

The SNK0800RD supports dual-monitor viewing using a VGA port and an HDMI port while the SNK1600RD supports triple-monitor viewing using two HDMI ports and one VGA port.

To enable dual-monitor viewing:

1. Right-click a view window and choose **Screen Layout**, and then select a layout with two digits (for example,).

2. Right-click a view window and choose **Secondary Screen**.

3. In the displayed **Secondary Screen** dialog box, click each view window to select a camera, as shown in the following figure.

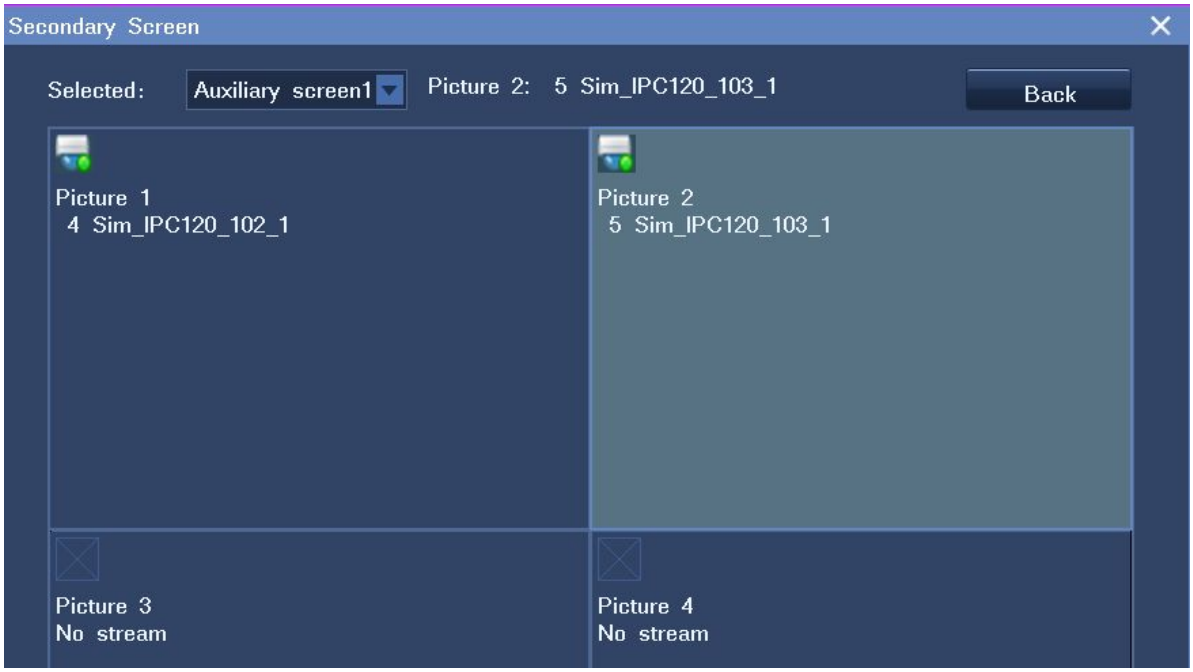
4. Click **Back**.

To enable triple-monitor viewing:

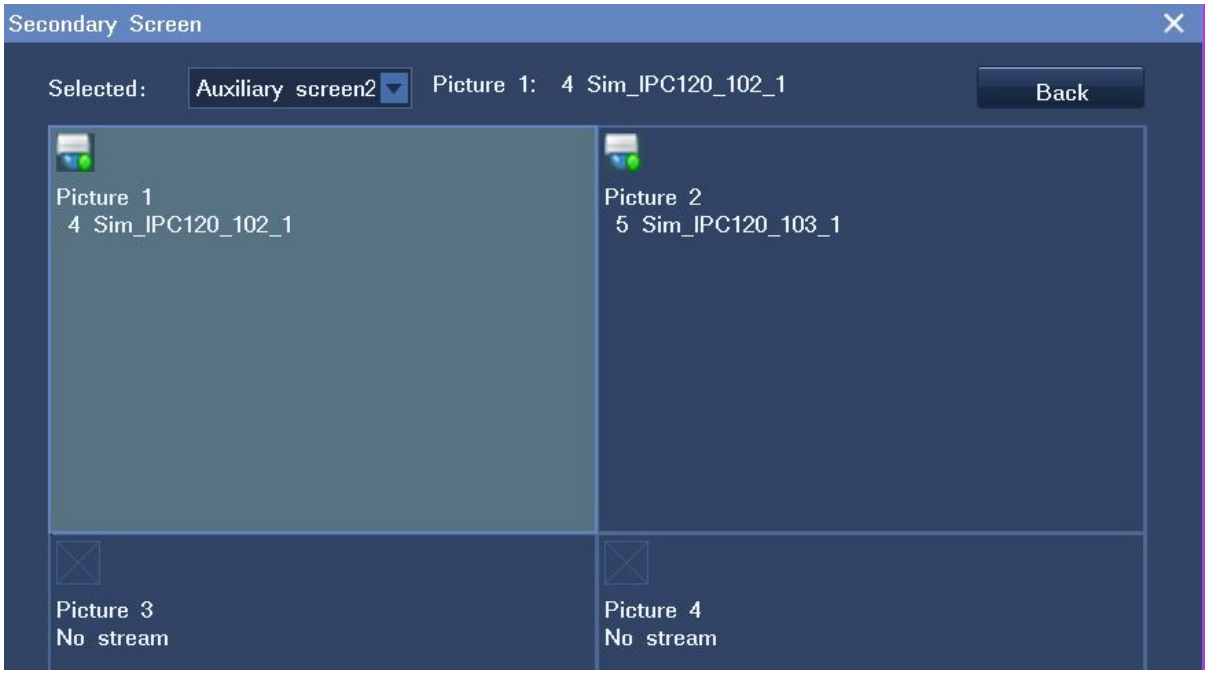
1. Right-click a view window and choose **Screen Layout**, and then select a layout with three digits (for example,).

2. Right-click a view window and choose **Secondary Screen**.

3. In the displayed **Secondary Screen** dialog box, select a secondary screen and click each view window to select a camera, as shown in the following figure.



4. Select the other secondary screen and click each view window to select a camera, as shown in the following figure.



5. Click **Back**.

If you cannot enable this feature, choose **Main Menu** > **Settings** > **General** to check whether the **Disable the secondary screen** option is selected.

- If yes, deselect the option to enable dual-monitor viewing.
- If not, contact your system administrator or the local authorized Sysvideo agent.

If more than 32 ONVIF cameras are connected to an NVR other than SNK1600RD, you must select the **Disable the secondary screen** option. If more than 64 ONVIF cameras are connected to an SNK1600RD, you must select the **Disable the secondary screen** option.

Note

The **Disable the secondary screen** option is available only to NVRs that support more than 32 cameras.

For the SNK16128RD, you cannot use the dual/triple-monitor viewing feature if you already create RAID arrays. In other words, you cannot create RAID arrays if you already use the dual/triple-monitor viewing feature.

Heterologous output

In heterologous output mode, the output from the VGA and HDMI ports is different. All the SNK RAID series enterprise NVRs support this mode.

3.9 Setting the Video Wall

You can monitor sites on a video wall but you must get at least one decoder ready. If no decoders are configured, you cannot monitor sites on the video wall.

To monitor sites on a video wall, do as follows:

1. Choose **Main Menu** > **Settings** > **Video Wall**.

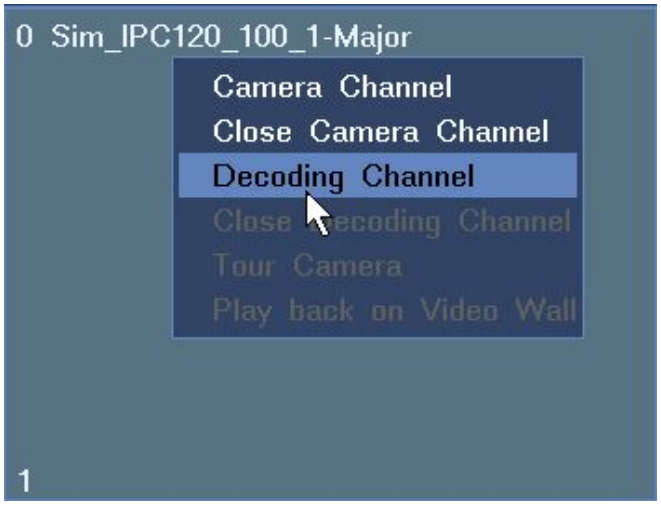
2. In the displayed dialog box, select a screen layout scheme.

   In this step, you can also change the screen layout for the scheme. Currently, a maximum of 64 view windows can be displayed on a video wall.

3. Bind a camera and a decoding channel for each view window.

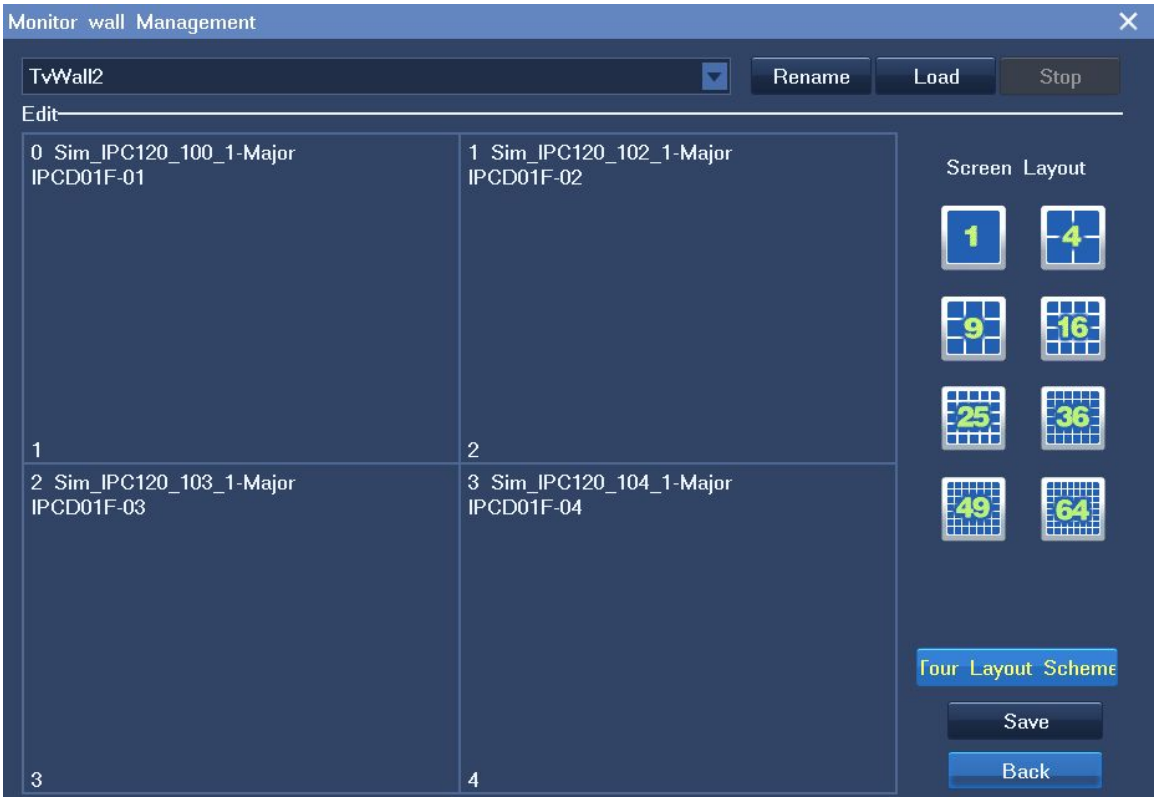
   1) Click a view window, choose **Camera Channel**, and select a camera, as shown in the following figure.

2) Click the view window, choose **Decoding Channel**, and select a decoder, as shown in the following figure.



3) Repeat the previous two steps for all the view windows.

The following is an example.

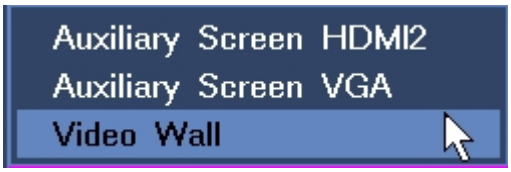


Note that one decoding channel receives the video from only one camera. Currently, a maximum of 64 decoding channels are supported.

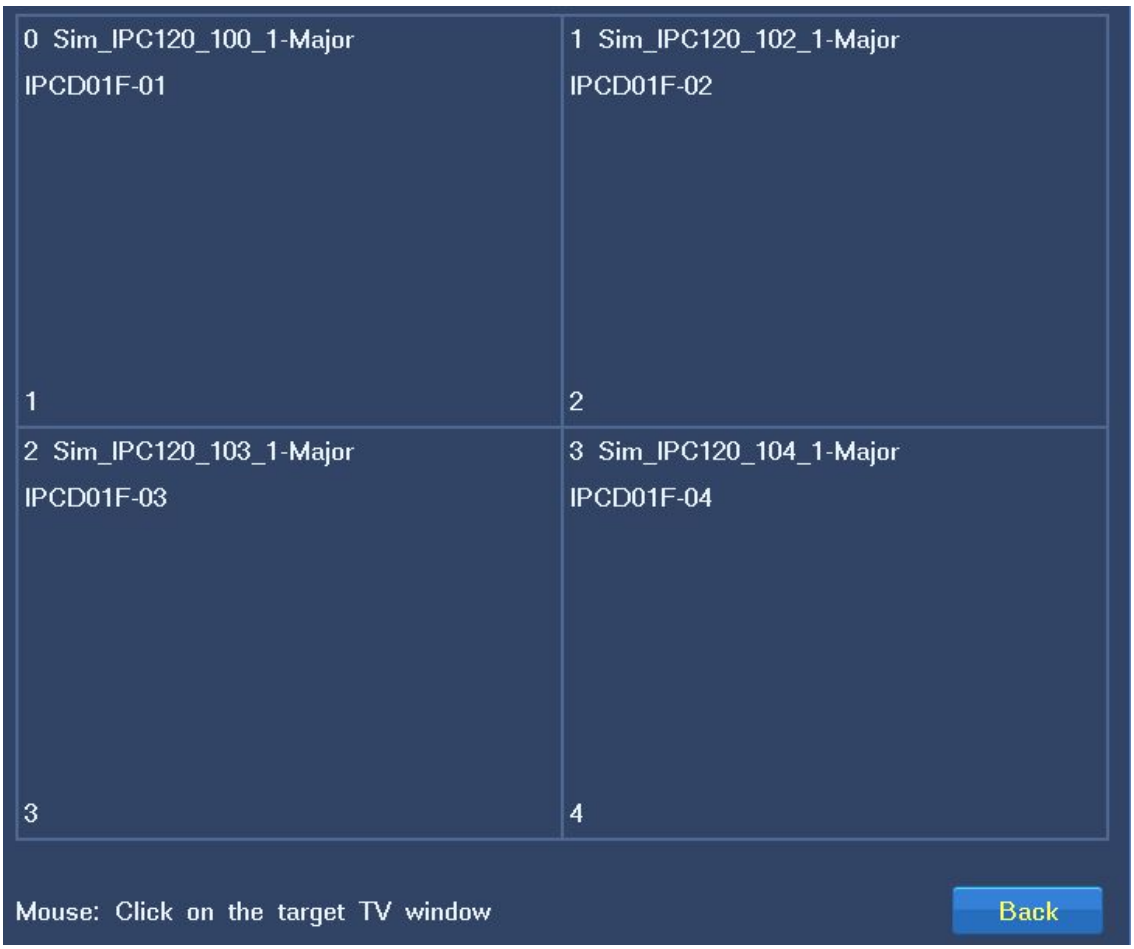
4. Click **Load** and then **Back**.

To change a camera, do as follows:

1. Right-click the view window of the camera and choose **Send Video To** > **Video Wall**, as shown in the following figure.



2. In the displayed window, select a video window for the camera, as shown in the following figure.



Note

You can change cameras only after a screen layout scheme is loaded onto the video wall.

To tour screen layout schemes on the video wall, do as follows:

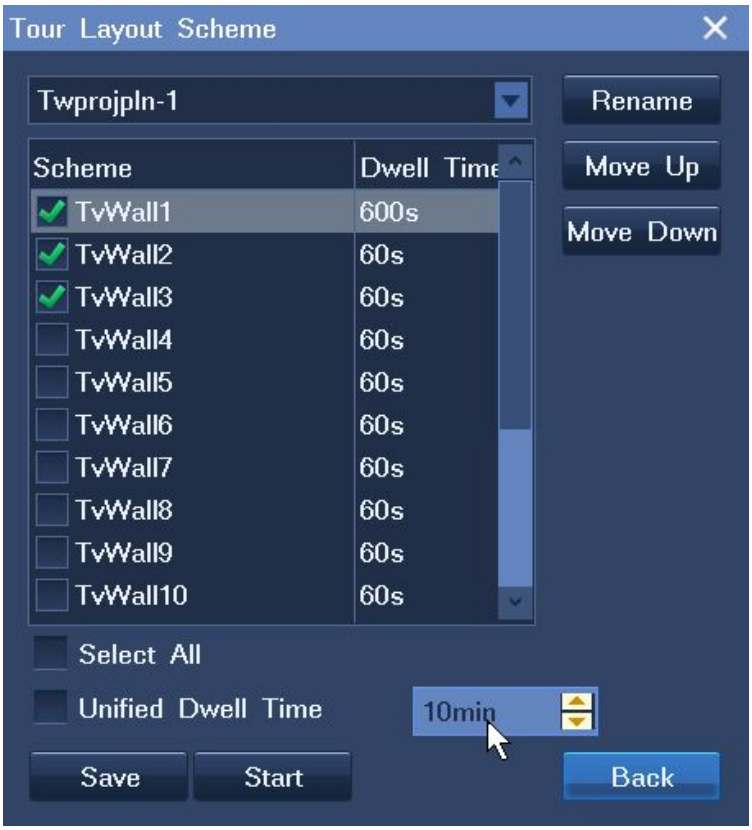
1. Choose **Main Menu** > **Settings** > **Video Wall** > **Tour Layout Scheme**.

2. In the displayed **Tour Layout Scheme** dialog box, select a touring scheme. By default, the Twprojpln-1 scheme is selected.

3. Select layout schemes to be toured and enter a dwell time.

   You can enter either a unique dwell time for each scheme or a unified dwell time for several schemes.

   To enter a unique dwell time for a scheme, select the scheme and select a time length from the **Unified Dwell Time** drop-down list, as shown in the following figure.

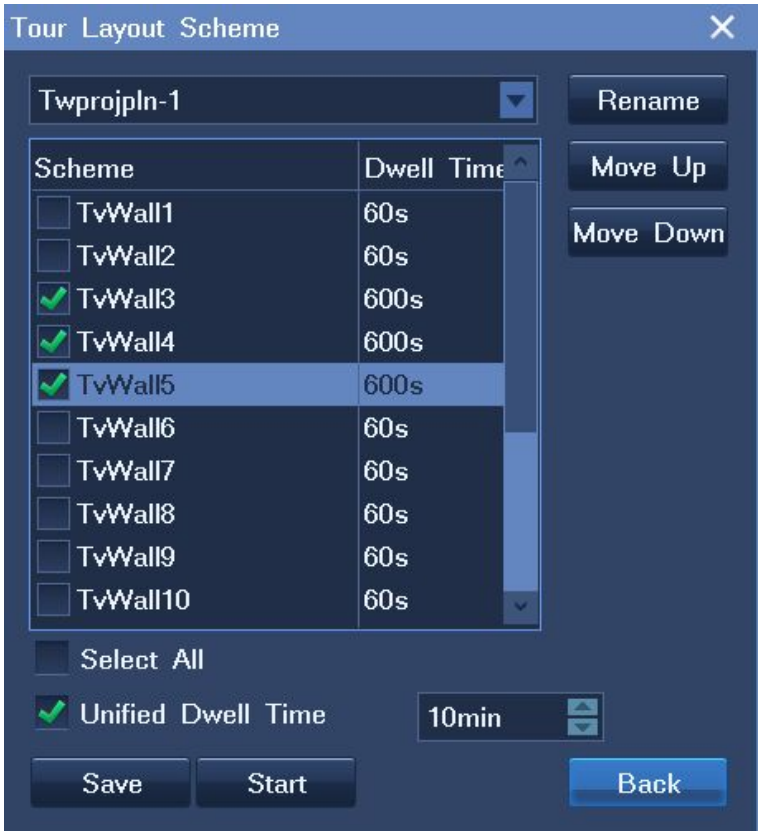


To enter a unified dwell time for several schemes:

4) Select these schemes.

5) Click **Unified Dwell Time** and select a time length from the **Unified Dwell Time** drop-down list.

The following is an example.



4. (Optional) Change the order for each scheme using the **Move Up** and **Move Down** buttons.
5. (Optional) Click **Rename** to rename the current touring scheme.
6. Click **Start** and then **Back**.

3.10 Snapshots

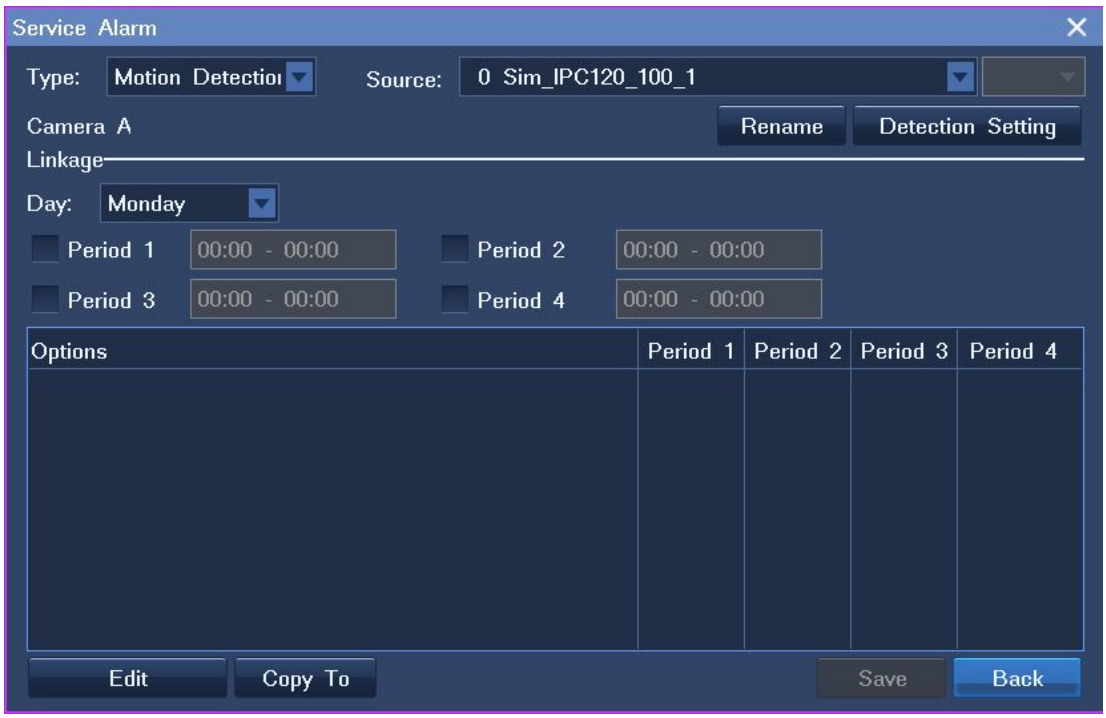
3.10.1 Capturing

To capture video images, click in the top right corner of a view window. Alternatively, right-click a view window and choose **Advanced** > **Snapshot**.

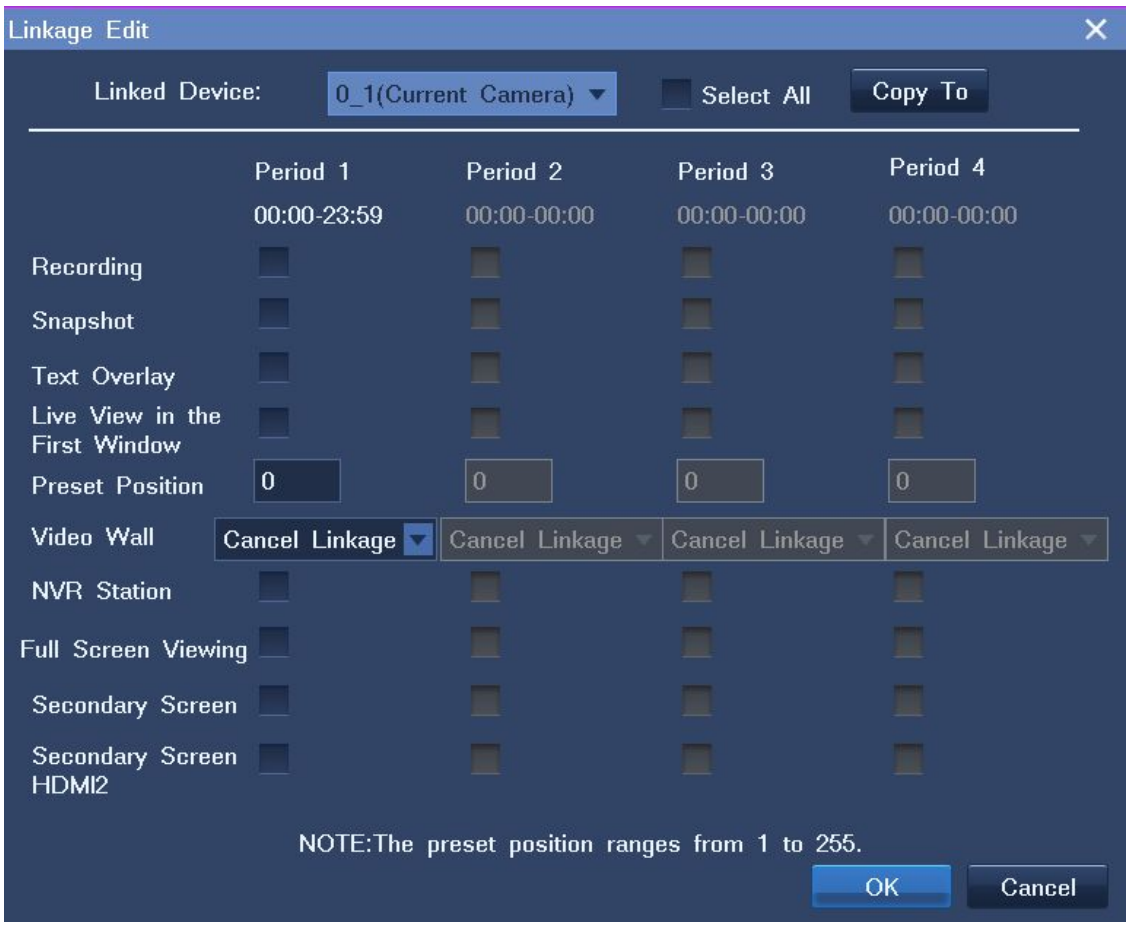
To schedule a capturing task through alarm linkage:

1. Choose **Main Menu** > **Alarm** > **Service Alarm**.

   The following figure shows the **Service Alarm** dialog box.



2. Select an alarm type from the **Type** drop-down list.
3. Select a source, day, and period.
4. Click **Edit**.
5. Select a linked camera from the **Linked Device** drop-down list, as shown in the following figure.

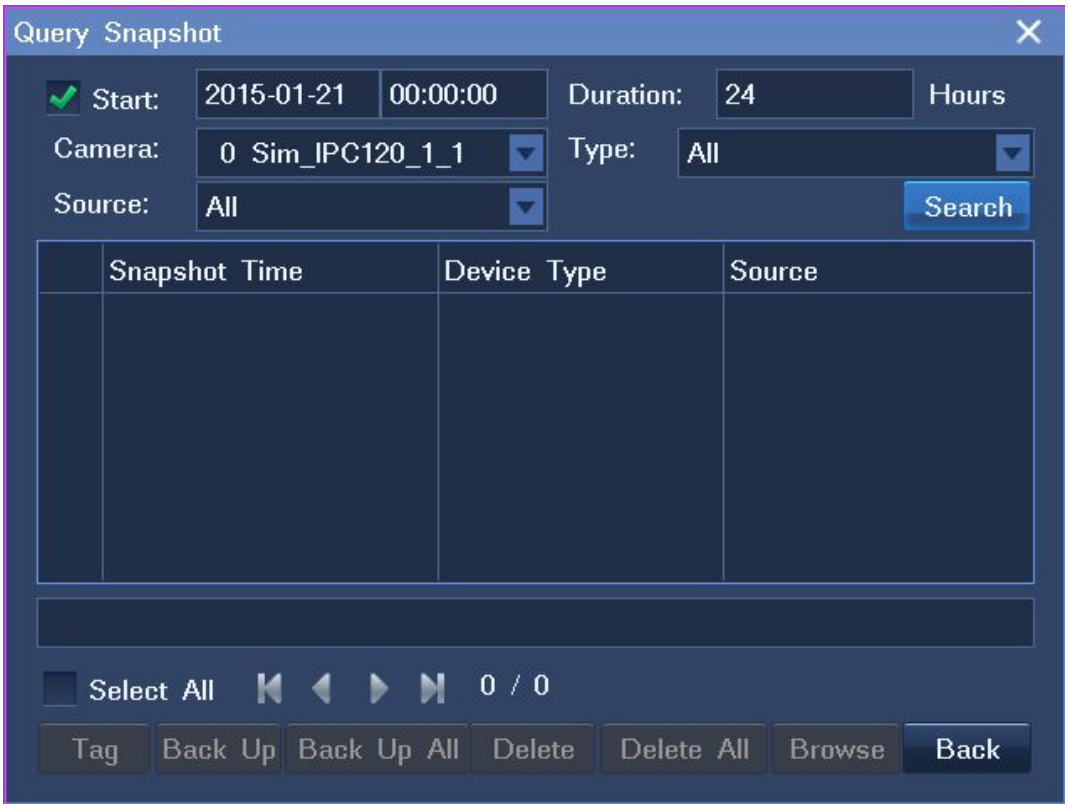


6. Select **Snapshot**.

3.10.2 Querying

To query snapshots:

1. Choose **Main Menu** > **Snapshot** > **Query Snapshot**.
2. Specify parameters according to onsite conditions.



3. Click **Search**.

The following table describes operations you can perform on snapshots.

Operation	Description
Tag	Give a name to a snapshot to facilitate snapshot searching. When a snapshot is tagged, you can easily find it by setting the **Type** parameter to the tag of the snapshot.
Back Up	Back up specific snapshots. Before backing up a snapshot, insert a USB flash drive.
Back Up All	Back up all snapshots. Before backing up a snapshot, insert a USB flash drive.
Delete	Delete specific snapshots
Delete All	Delete all snapshots.

Operation	Description
Browse	Browse all snapshots.

3.10.3 Settings

To configure snapshot settings:

1. Choose **Main Menu** > **Snapshot** > **Settings**.
2. Specify parameters according to onsite conditions.

3. Click **Save**.

3.11 Changing the Image Position

To change the image position:

1. Right-click a view window and choose **Image Position**.
2. Select an option.

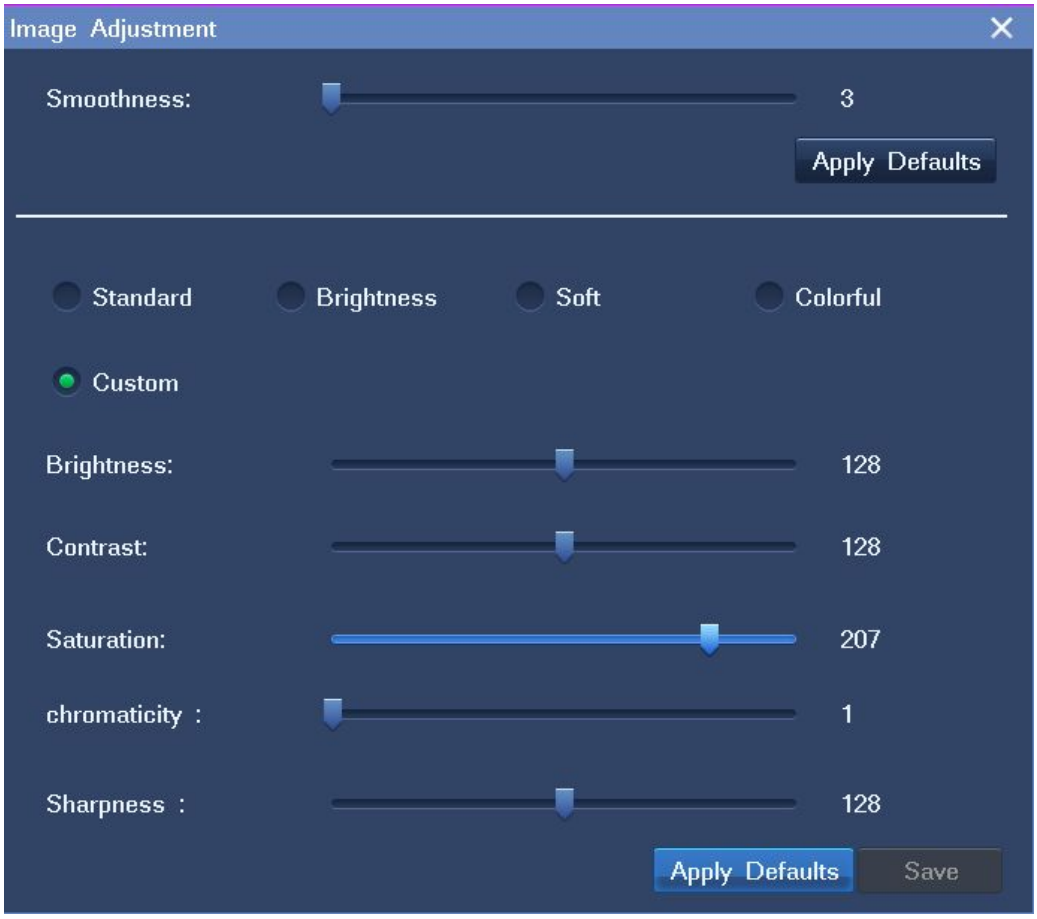
Note

If you find the Image Position option does not take effect, contact the NVR system administrator to check whether the option is supported by the camera in question. If the option is supported, contact the local authorized Sysvideo agent.

3.12 Configuring Image Settings

To configure image settings for a camera:

1. Right-click a view window and choose **Advanced** > **Image Adjustment**.
2. Change parameter values according to onsite conditions, as shown in the following figure.



You can also click **Apply Defaults** to apply the default settings.

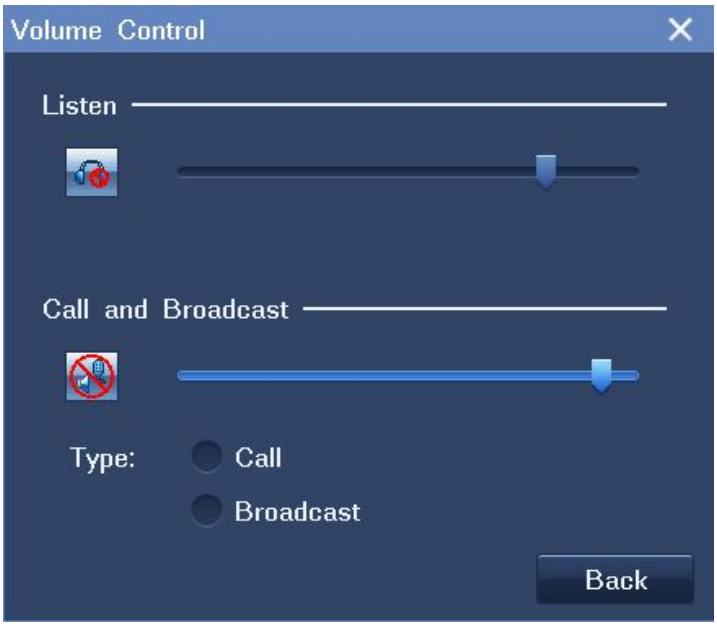
3. Click **Save**.

3.13 Listening, Calling, and Broadcasting

Along with exceptional image quality, SNK RAID series enterprise NVRs can also record audio.

To listen to a camera:

1. Right-click the corresponding view window and choose **Volume Control**.
2. Click .



To call a camera:

1. Right-click the corresponding view window and choose **Volume Control**.
2. Select **Call**.

To start a broadcast:

1. Right-click the corresponding view window and choose **Volume Control**.
2. Select **Broadcast**.

To switch from a call to a broadcast, select **Broadcast**.

To switch from a broadcast to a call, stop the broadcast by clicking and select **Call**.

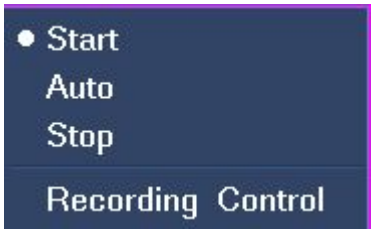
4 Recording

4.1 Starting a Recording

You can start a recording by setting the recording mode for a camera.

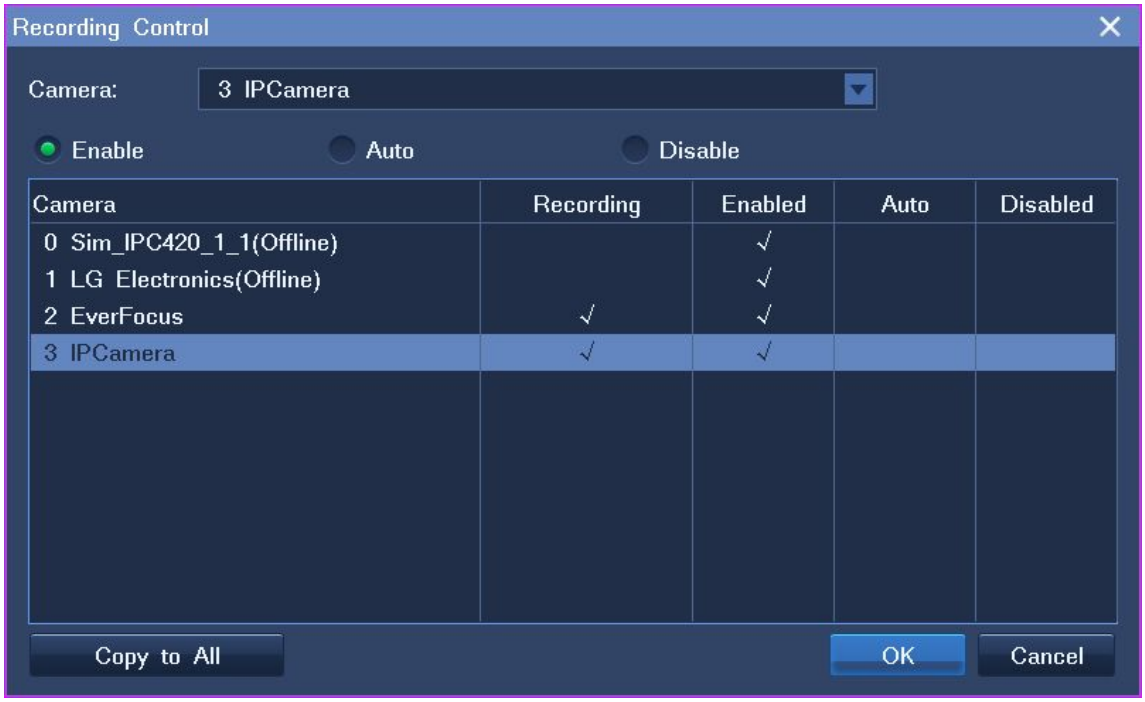
Method 1

Right-click a view window and choose **Recording** > **Start**.



Method 2

1. Right-click a view window and choose **Recording** > **Recording Control**. Alternatively, choose **Main Menu** > **Record** > **Recording Control**.



2. Select a camera.
3. Select **Enable**.

If necessary, click **Copy to All** to start a recording for all cameras connected to the NVR.

4.2 Scheduling a Recording

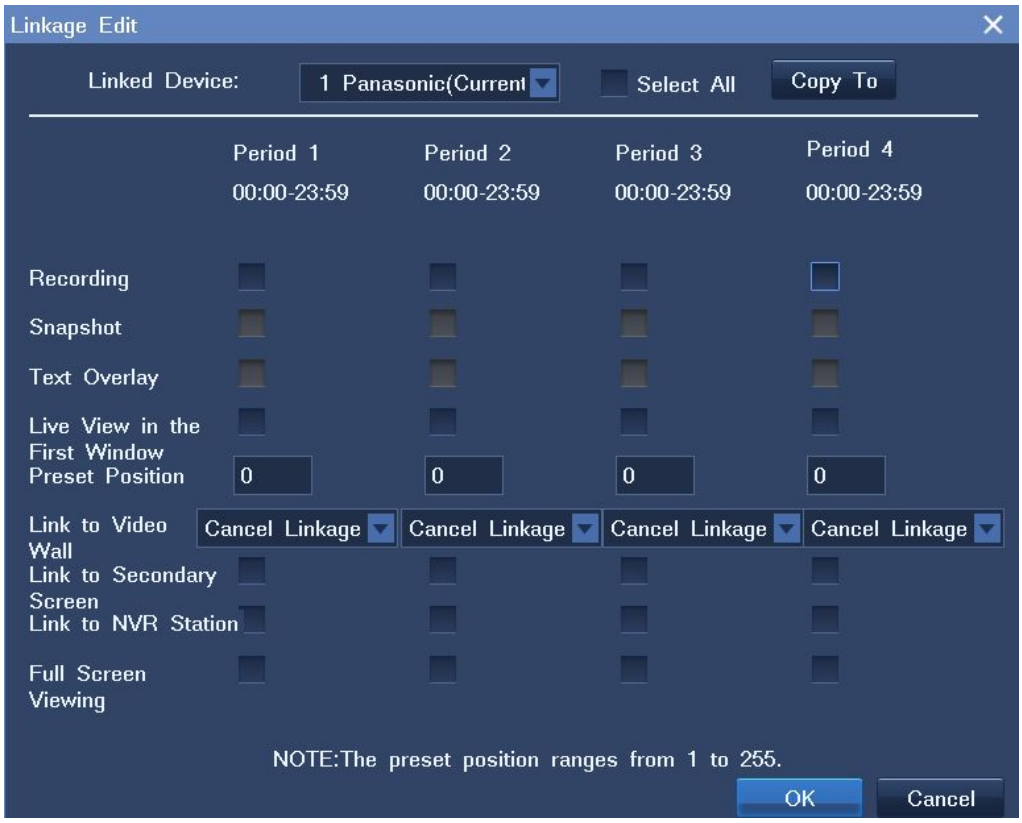
You can schedule a recording by setting the alarm linkage or the recording scheduling function.

By alarm linkage

Through alarm linkage, a recording can automatically start when an alarm is triggered.

To schedule a recording:

1. Choose **Main Menu** > **Alarm** > **Service Alarm**.
2. Select an alarm type from the **Type** drop-down list.
3. Select a source, day, and period.
4. Click **Edit**.
5. Select a linked camera from the **Linked Device** drop-down list, as shown in the following figure.



6. Select **Recording**.

Note

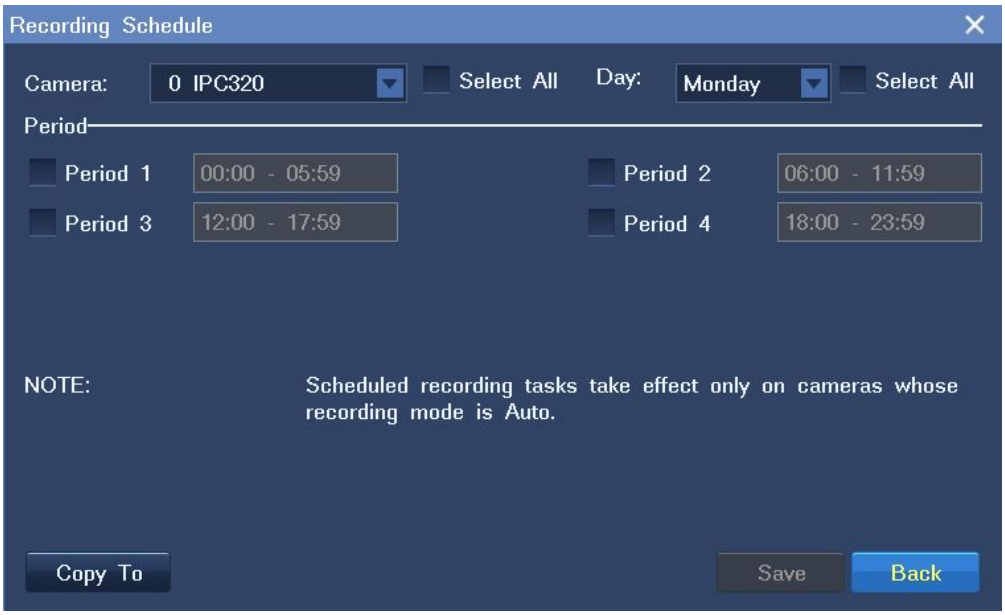
The alarm linkage method applies only to cameras whose recording mode is Auto.

By the recording scheduling function

To schedule a recording:

1. Choose **Main Menu** > **Record** > **Recording Schedule**.

2. Select a camera from the **Camera** drop-down list, a day, and a period.



If necessary, click **Copy To** and specify parameters to copy the scheduling settings to all cameras or specific cameras.

3. Click **Save**.

Note

This function applies only to cameras whose recording mode is Auto.

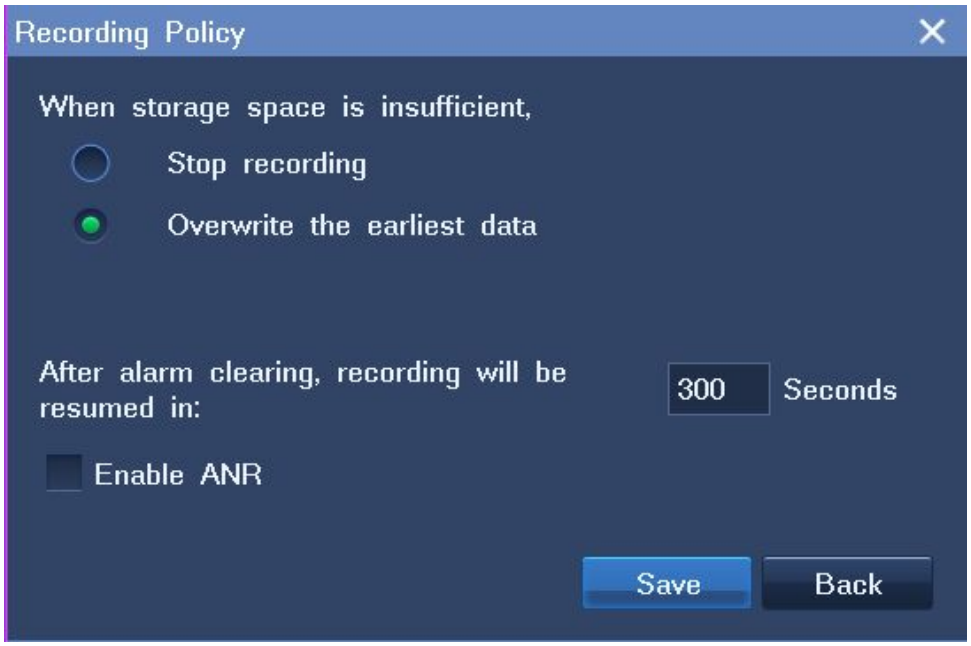
4.3 Setting the Recording Policy

The recording policy includes the following:

- What to do when storage space is insufficient
- When a recording will be resumed after an alarm is cleared
- Whether to enable the ANR feature

To configure the recording policy:

1. Choose **Main Menu** > **Record** > **Recording Policy**.
2. Specify parameters and select options according to onsite conditions.

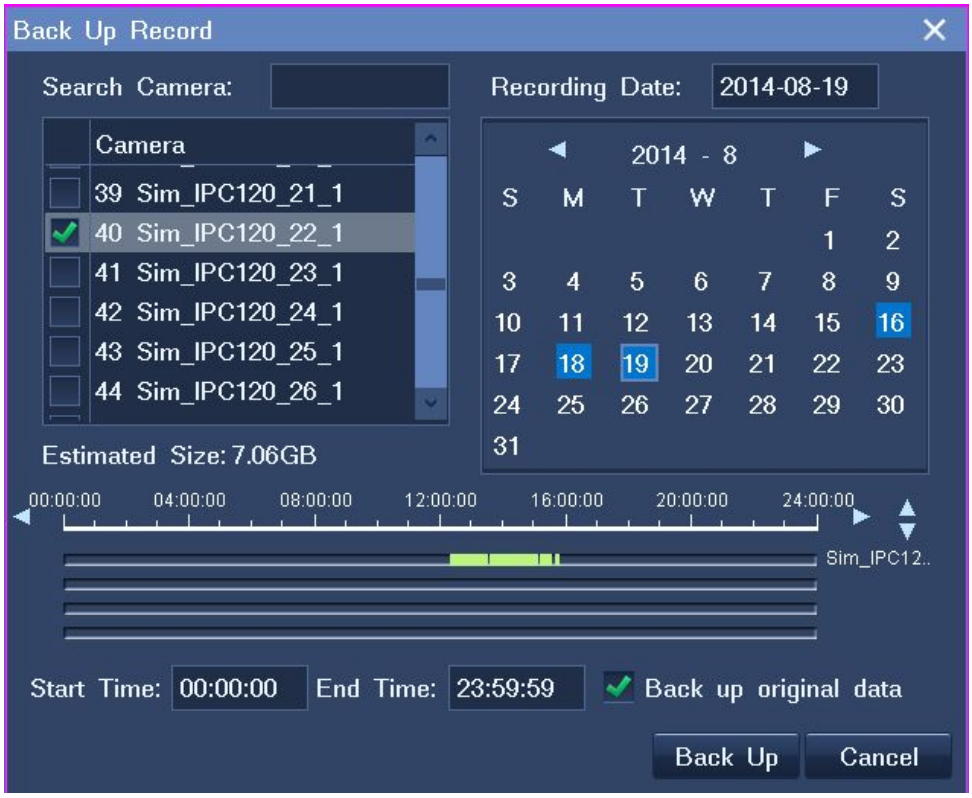


3. Click **Save**.

4.4 Backing Up Records

To back up records:

1. Choose **Main Menu** > **Record** > **Back Up Record**.
2. (Optional) Enter a keyword in the text box next to **Search Camera** to quickly find the target camera.
3. Select the target camera from the camera list.
4. Select a recording date, as shown in the following figure.



Note that a blue date indicates that records are available on this date.

On the time line, the green sections indicate that records are available.

5. Specify the **Start Time** and **End Time** parameters.
6. (Optional) Select **Back up original data**.

   This option can accelerate the backup progress. However, the backups can be played back only by Sysvideo nvrlocalplayer that comes with the NVR.
7. Click **Back Up**.
8. In the displayed dialog box, select a disk and click **Start**.

4.5 Querying Records

To query record backups:

1. Choose **Main Menu** > **Record** > **Search Record Backup**.
2. In the **Search Record Backup** dialog box, select a disk from the **Disk** drop-down list.
3. Click **Search**.

After you find a record backup, you can play it back on the NVR by clicking **Play Back**. For playback details, see chapter 5 "Playing Back."

5 Playing Back

5.1 Multi-Record Playback

During a multi-record playback, you can play back multiple records and switch to live viewing anytime.

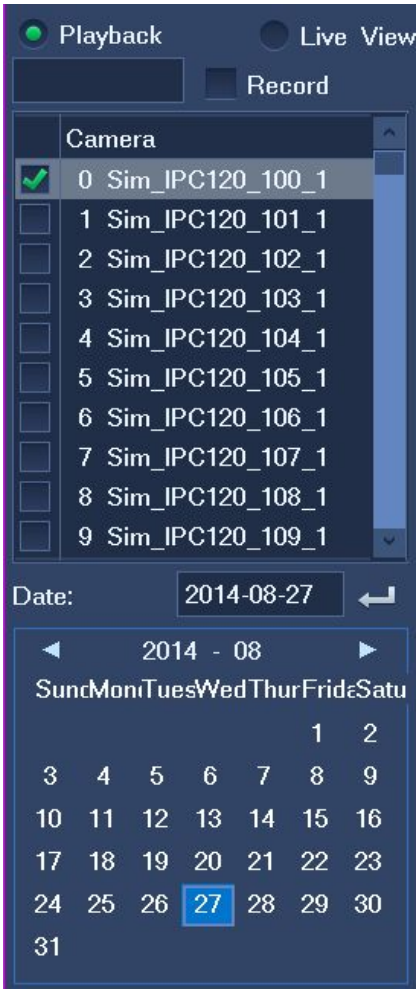
To start a multi-record playback:

1. Choose **Main Menu** > **Record** > **Multi-Record Playback**.

2. Click **Layout** at the bottom of the window to select a screen layout, for example, the four-window screen layout.

3. Click one view window and select one camera from the camera list on the right panel to bind the camera and the view window together.

4. Select or enter a recording date under **Date**, and select a start time on the timeline.



Note that a blue date indicates that records are available on this date. You can click to pin the control panel.

For the timeline, you can zoom in to select a start time accurate to the minute. If you do not select a recording date, the current date is selected by default.

If you do not select a start time, the earliest time point on the timeline is selected by default.

5. Repeat steps 3 and 4 for each target camera.
6. Click for each view window.

Note that pink sections of the timeline indicate that alarms are generated during this period and that green sections of the timeline indicate that records are available during this period.

The following table describes playback options.

Option	Description
Pause	Stop a playback temporarily.

Option	Description
Stop	Stop a playback.
Low Playback Speed	Slow the playback down.
Fast Playback Speed	Accelerate the playback.
Fast Backward	Skip to an earlier time point.
Fast Forward	Skip to a later time point.
Previous Event	Skip to an earlier event.
Next Event	Skip to a later event.
Single-Frame Playback	Play back frame by frame.
Add Tag	Create tags.
Manage Tag	Edit, delete, or play back tags.
Option	In the **Option** window, you can select events to display and configure intervals for fast backward and fast forward.
Image Position	Change the image position.
e-PTZ	Click the arrow button to draw a square to digitally zoom in. Click the hand button to move the image up, down, left, or right. Right-click the view window to return to the playback screen.
Record Fragment	This feature breaks one piece of record into several parts and plays these parts at the same time. To use this function: 1. Bind one view window and one camera. 2. Select a recording date. A blue date indicates that records are available on this date. 3. Select a screen layout, for example, the four-window layout.

Option	Description
	4. Click **Record Fragment**. 5. Enter a period. 6. Click **OK**. After the preceding steps are performed, the original piece of record of the camera is broken into four parts and these parts are simultaneously played back in the four windows. If you want to break one piece of record into nine parts, select the nine-window layout. If you want to break one piece of record into 16 parts, select the 16-window layout.
Synchronous Playback	Switch to a synchronous playback.
Skip To	Enter a start time and click the arrow to skip to the start time.
Exit	Exit the playback window.

To switch to live viewing, move your cursor to the right edge of the screen until a camera list is displayed and click **Live View**.

5.2 Single-Record Playback

During a single-record playback, you can play back only one record and switch to live viewing anytime.

You can start a single-record playback in three ways.

Method 1

1. Choose **Main Menu** > **Record** > **Multi-Record Playback**.
2. Click **Layout** at the bottom of the window to select the one-window screen layout.
3. Click one view window and select one camera from the camera list on the right panel to bind the camera and the view window together.
4. Select or enter a recording date under **Date**, and select a start time on the timeline.

   Note that a blue date indicates that records are available on this date. You can click to pin the control panel.

   For the timeline, you can zoom in to select a start time accurate to the minute.

   If you do not select a recording date, the current date is selected by default.

If you do not select a start time, the earliest time point on the timeline is selected by default.

5. Click .

Method 2

1. Right-click a view window and choose **Record Playback**.
2. Select a recording date under **Date**, and select a start time on the timeline.
3. Click .

Method 3

1. On a view window, click .
2. Select a recording date under **Date**, and select a start time on the timeline.
3. Click .

Note that pink sections of the timeline indicate that alarms are generated during this period and that green sections of the timeline indicate that records are available during this period.

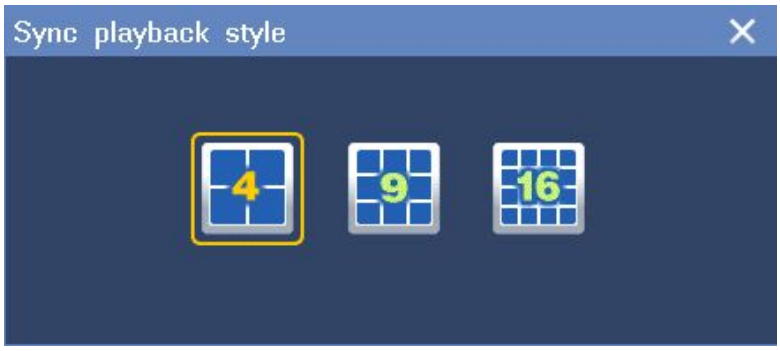
5.3 Synchronous Playback

During a synchronous playback, all records are played back at the same start time.

To start a synchronous playback:

1. Choose **Main Menu** > **Record** > **Synchronous Playback**.
2. Click **Layout** at the bottom of the window to select a screen layout.

   The following is an example.



3. Click one view window and select one camera from the camera list on the right panel to bind the camera and the view window together.

4. Repeat step 3 for each view window.

5. Select or enter a recording date under **Date**.

   Note that a blue date indicates that records are available on this date.

   From the view of the set theory, the displayed dates are the union of the selected cameras. For example, records are available on March 1 for camera 1 and records are available on March 2 for camera 2. In such a case, the dates March 1 and 2 are blue.

6. Click each view window to check for the time points when records are available.

7. On the control panel, select a start time on the timeline.

   For the timeline, you can zoom in to select a start time accurate to the minute.

   You can click to pin the control panel.

8. Click .

9. (Optional) Enter a time at the end of the timeline and click the arrow to skip to another start time.

Note that pink sections of the timeline indicate that alarms are generated during this period and that green sections of the timeline indicate that records are available during this period.

5.4 Playing Back Records from Deleted Cameras

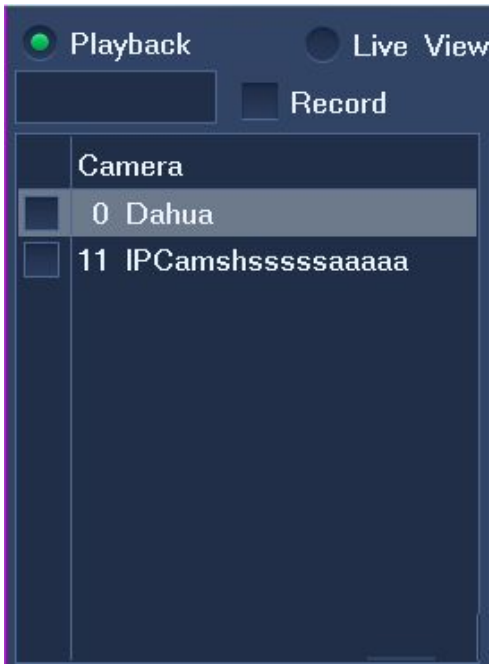
To play back records from the cameras those have been deleted from your NVR:

After a camera is removed from an NVR, the records made from the camera may remain on the NVR. In such a case, you can play back these records.

To play back such records:

1. During a multi-record playback or synchronous playback, select **Record**.

   Before **Record** is selected, you can find only online cameras, as shown in the following figure.



After **Record** is selected, you can find a number of free channels, each of which indicates a record.

2. Select or enter a recording date under **Date**.
3. On the control panel, select a start time on the timeline.
4. Click .

6 Alarming

6.1 Motion Detection

Note

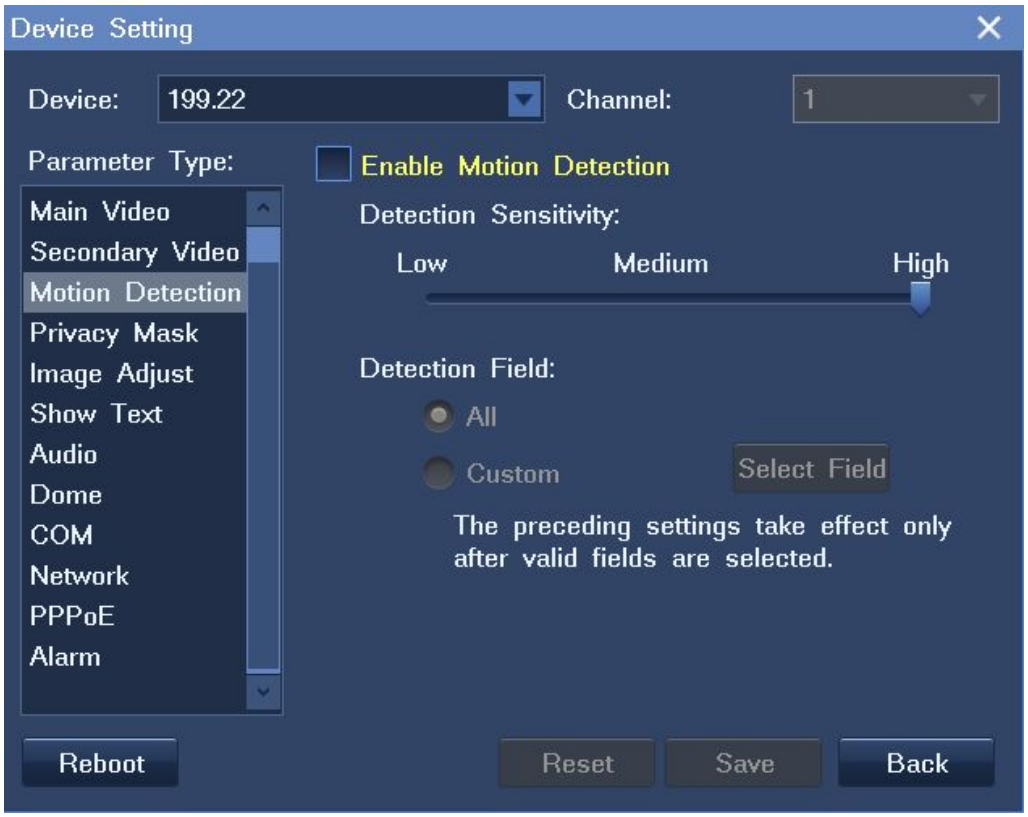
Some IP cameras don’t support motion detection when it work with NVR, if the function is not available, please ask Sysvideo .

The motion detection feature enables a camera to send an alarm notification to the NVR when a suspicious motion is detected in a preset area. An alarm is triggered when the NVR receives the notification. After this, the "Alarm: Moving" text is displayed on the main screen.

Note that this feature is available only to service alarms.

To enable this feature for a camera:

1. Right-click the corresponding view window and choose **Device Setting** > **Motion Detection**, as shown in the following figure.

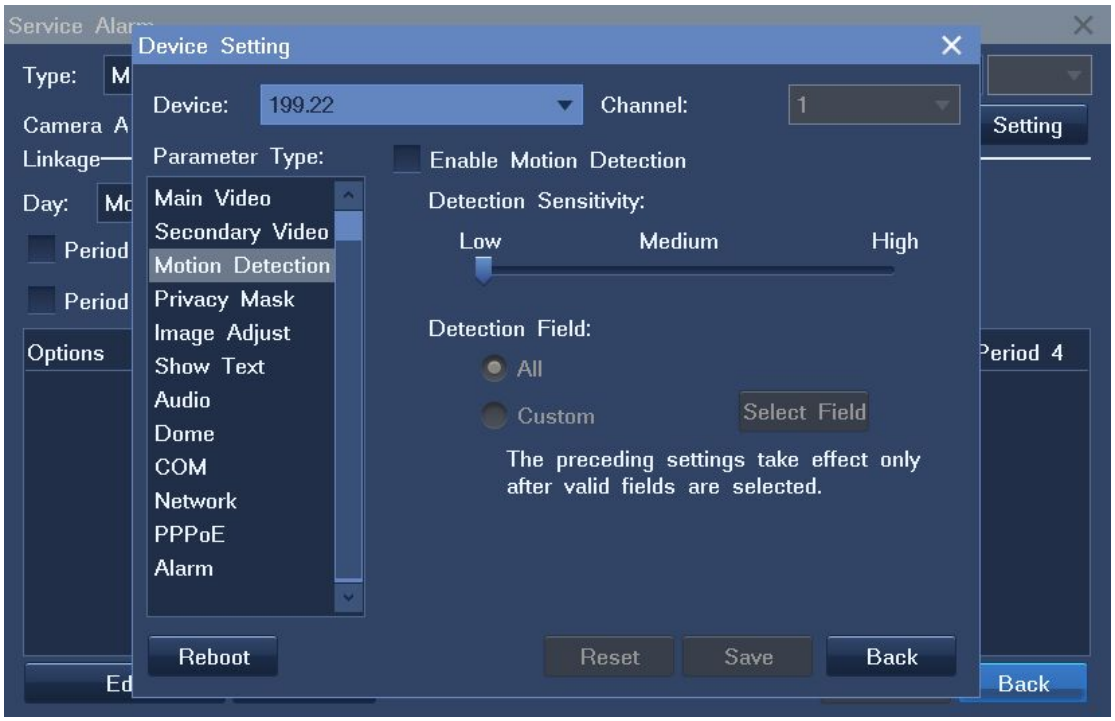


2. Select **Enable Motion Detection**.

3. Set the detection sensitivity.
4. Select a detection area.
5. Click **Save**.

Alternatively:

1. Choose **Main Menu** > **Alarm** > **Service Alarm**.
2. Set the **Type** parameter to **Motion Detection**.
3. Select the camera from the **Source** drop-down list.
4. Click **Detection Setting**.
5. Select **Enable Motion Detection**, as shown in the following figure.



6. Set the detection sensitivity.
7. Select a detection area.
8. Click **Save**.

6.2 Alarm Linkage

The alarm linkage technique helps you quickly respond to alarms such as motion detection and data loss. When detecting alarms, the system can link live video browsing, alarm triggered videos, video walls, and

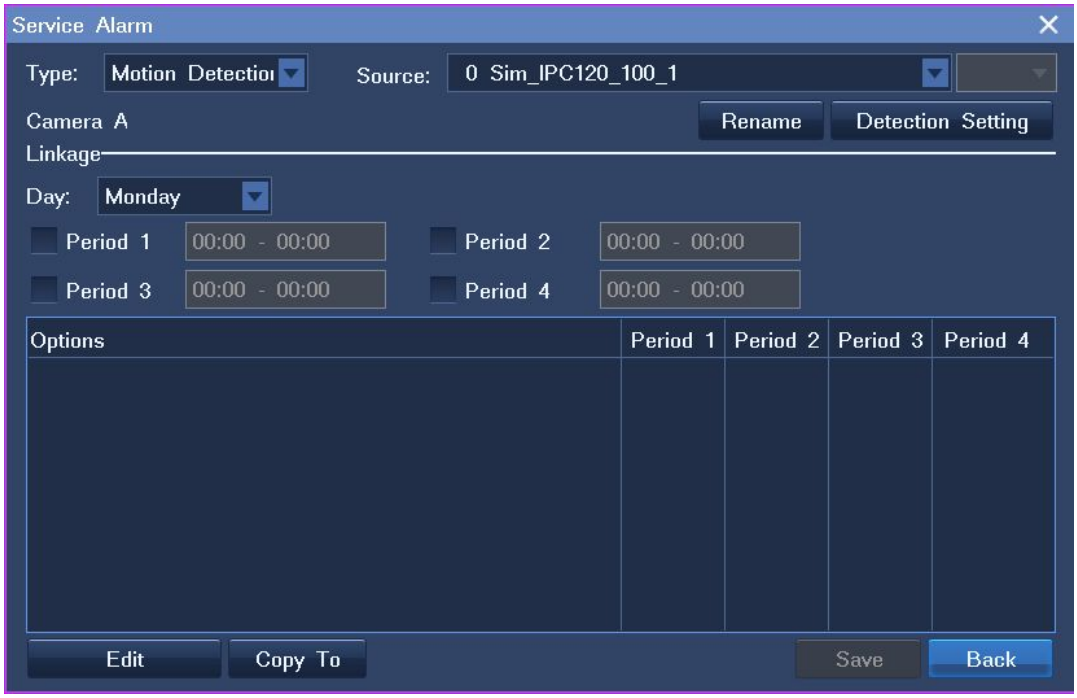
alarm output devices. Additionally, the system can:

- Start a recording
- Take snapshots
- Display the duration the alarm persists
- Invoke camera presets
- Display live video on secondary screens
- Play alarm sound
- Display an alarm window on the NVR Station which is an NVR management application
- Send an alarm notification to the preset email address

To set alarm linkage, do as follows:

1. Choose Main **Menu** > **Alarm** > **Service Alarm**.

2. In the displayed **Service Alarm** dialog box, set parameters as required, as shown in the following figure.



1) Select an alarm type, for example, **Motion Detection**.

2) Select a source camera.

3) (Optional) Click **Rename** to add an alias to the source camera.

   Note that the alias will be displayed together with the name of the source camera on the **Active Alarm** window.

4) Click **Detection Settings** to enable the motion detection function and configure function-related settings.

5) Click **Back**.

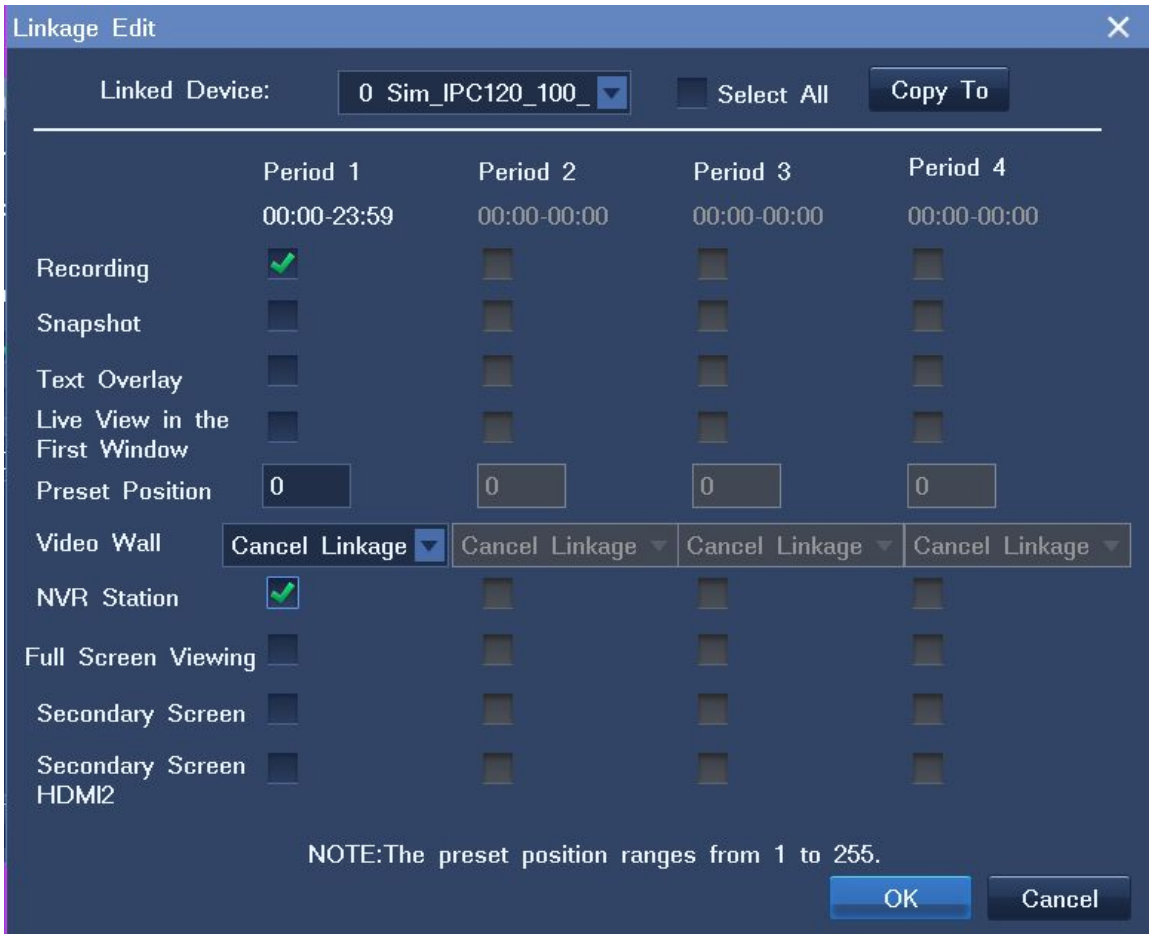
6) Select a day.

7) Select one or multiple duration options.

8) Click **Edit**.

9) In the displayed **Linkage Edit** dialog box, choose a device to be linked, for example, another camera.

The following is an example.



10) Select actions for each duration option. Note that actions vary according to the type of linked device.

The following table provides the description for each action.

Action	Description	Remarks
Recording	Start a recording.	-
Snapshot	Take snapshots.	To configure snapshot settings, choose **Main Menu** > **Snapshot** > **Settings**.
Text Overlay	Display the duration the alarm persists. When the alarm is cleared, regardless of whether manually or automatically, the duration disappears.	-
Live View in the First Window	When the one-picture screen layout is selected, the system displays the live video from the linked camera immediately after an alarm is generated. When the live video from multiple cameras is displayed on the main screen: • If the linked camera is bound to one view window, a red square is added to the view window after an alarm is generated. • If the linked camera is not bound to any view window, the system assigns the top left view window to the linked camera, allowing you to view the live video from this camera immediately after an alarm is generated.	-
Preset Position	Invoke a preset location, allowing you to point the linked camera at the preset location upon the generation of an alarm. To configure a preset location for a camera: 1. Right-click the corresponding view window and choose **PTZ Control**. 2. Choose a location for the camera by using PTZ controls, which are **Up**, **Down**, **Left**, and **Right**. 3. Click **Advanced**.	The numbers of preset locations supported by cameras vary according to the camera type.

Action	Description	Remarks
	4. On the first page, enter a digit in the text box next to the **Preset Position** parameter. 5. Click **Save**.	
Video Wall	Send the video from the linked camera to a view window on a video wall.	This option requires that a video wall be configured.
NVR Station	Display an alarm window on the NVR Station, allowing you to be aware of an alarm when you are not near the NVR and remotely clear the alarm.	-
Full Screen Viewing	View the video from the linked camera in full screen mode on the main screen.	-
Secondary Screen	Send the video from the linked camera to the monitor connected to the VGA or HDMI port of your NVR.	This option requires that a secondary screen be configured. Note that you will view the video in full screen mode on the secondary screen.
Secondary Screen HDMI2	Send the video from the linked camera to the monitor connected to the HDMI2 port of your NVR.	This option requires that a third screen be configured. Note that you will view the video in full screen mode on the third screen.

If the linked device is the NVR itself, the actions are as follows.

Action	Description	Remarks
E-Mail	Send an alarm notification to the preset email address.	To configure mail settings, choose **Main Menu** > **Settings** > **Mail Service**.

Buzzer	Enable the beeper on the NVR.	-
Alarm Output *X*	Invoke an alarm output device.	-

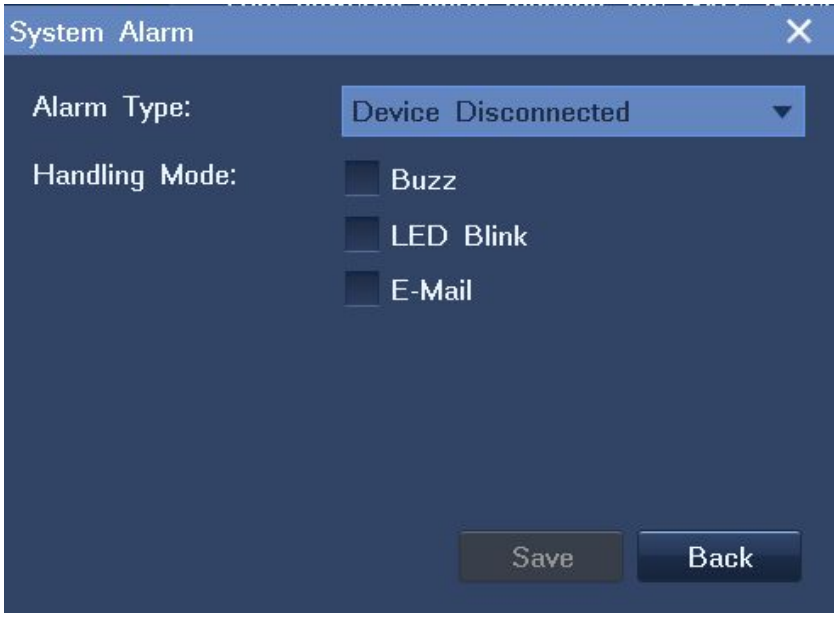
3. Click **Save**.

6.3 Configuring System Alarms

To configure system alarms:

1. Choose **Main Menu** > **Alarm** > **System Alarm**.

2. In the displayed **System Alarm** dialog box, specify parameters according to onsite conditions, as shown in the following figure.



For different types of system alarms, you can choose different ways to alert yourself.

The following table provides the description for each alarm type.

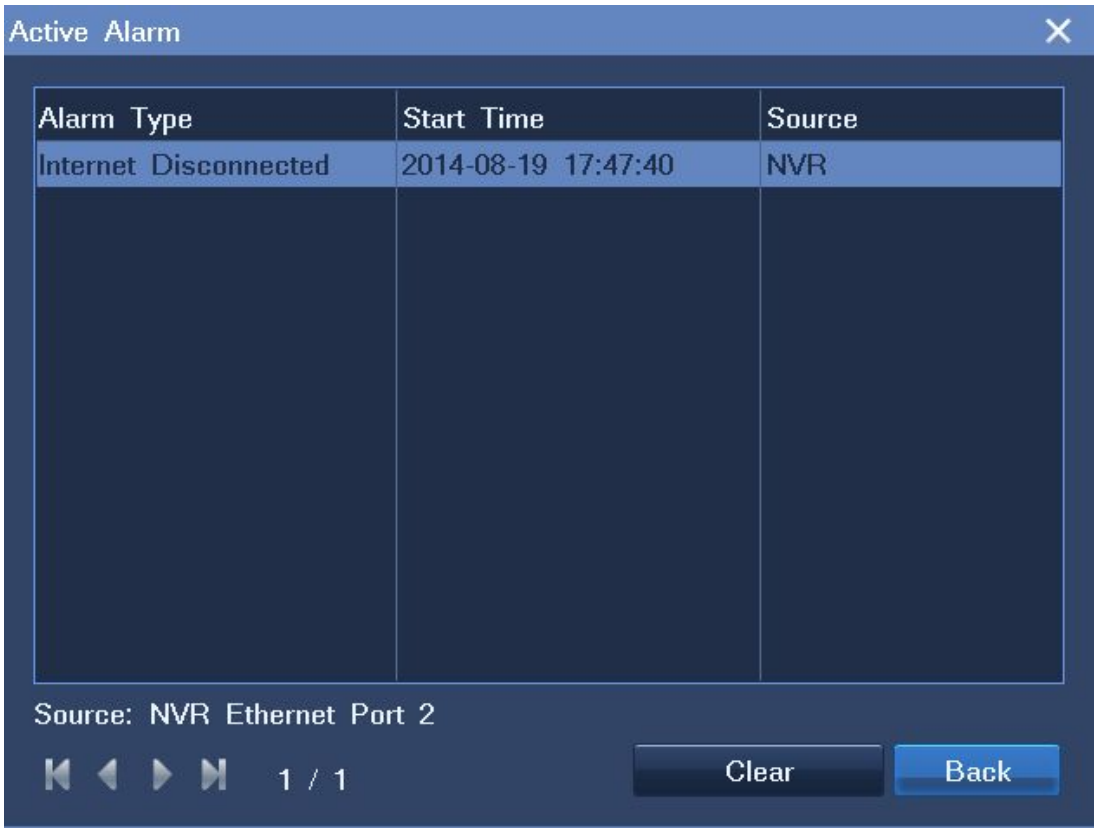
Action	Description
Device Disconnected	A device is disconnected from the NVR.
No Disk	No storage disk is found.
Faulty Disk	A faulty storage disk is found.
IP Address Conflict	An IP address of the NVR is in duplicate.

Internet Disconnected	The network cable is disconnected.
Low Speed	The network speed is low.
Insufficient Recording Space	No space is available for records.
Insufficient Snapshot Space	No space is available for snapshots.
MAC Address Conflict	An MAC address of the NVR is in duplicate.
No Synopsis Space	No space is available for record summarizing tasks and summarized records. For details about the Record Synopsis feature, see section 7.2 of *NVR Station User Guide*.

3. Click **Save**.

6.4 Querying Active Alarms

To query active alarms, choose **Main Menu** > **Alarm** > **Active Alarm**, as shown in the following figure.



Alternatively, right-click a view window and choose **Advanced** > **Query Active Alarm**.

When viewing active alarms, you can clear them.

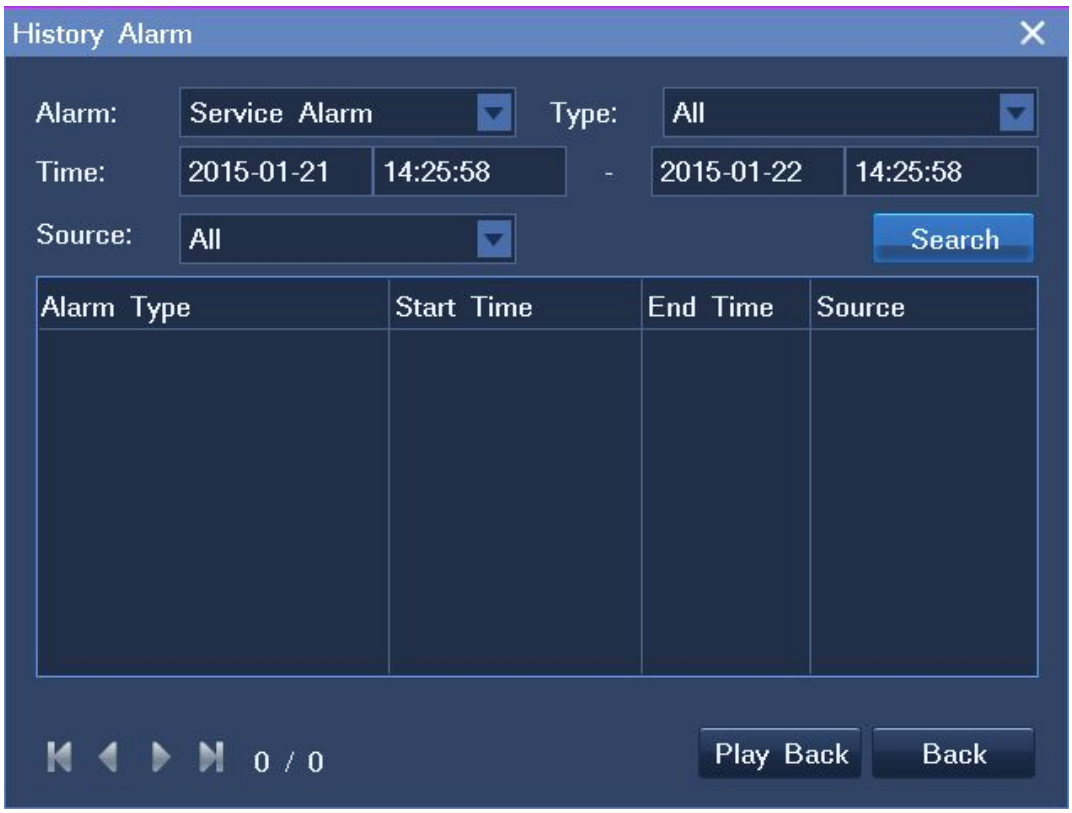
When an alarm is triggered, you can manually clear the alarm. If you do not manually clear the alarm:

- The alarm is automatically cleared when the exception or motion that triggers the alarm no longer exists.
- The alarm persists if the exception or motion persists.

6.5 Querying History Alarms

To query a specific type of history alarms generated on all cameras connected to the NVR:

1. Choose **Main Menu** > **Alarm** > **History Alarm**.
2. Select a general alarm type, for example, service alarm, as shown in the following figure.

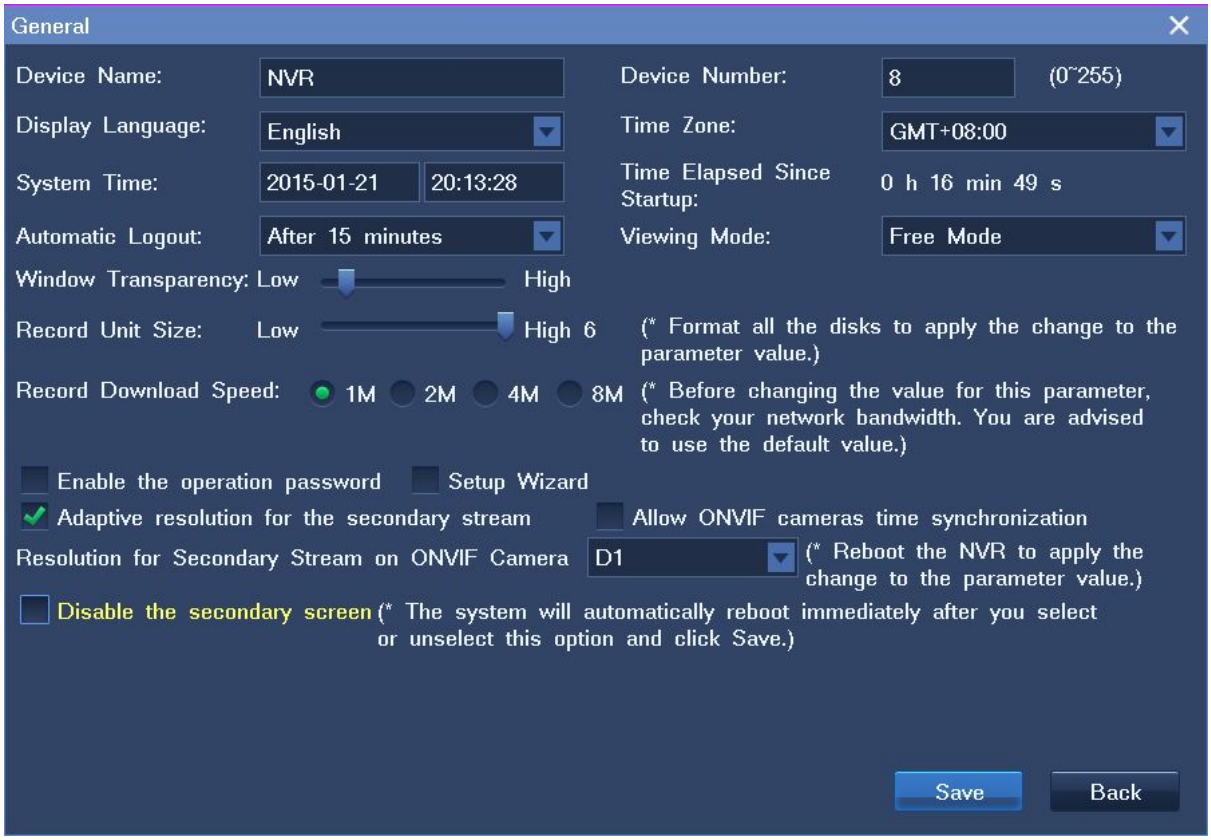


3. Select a service alarm type, for example, motion detection.
4. Specify **Time** and **Source**.
5. Click **Search**.
6. (Optional) Click **Play Back** to play back the recording that is started immediately after the alarm is triggered. Note that the recording is stopped as soon as the exception or motion that triggers the alarm no longer exists.

7 Miscellaneous

7.1 Basic System Information

Choose **Main Menu** > **Settings** > **General** to configure the basic system settings, as shown in the following figure.



The following table provides the descriptions for all parameters or options displayed.

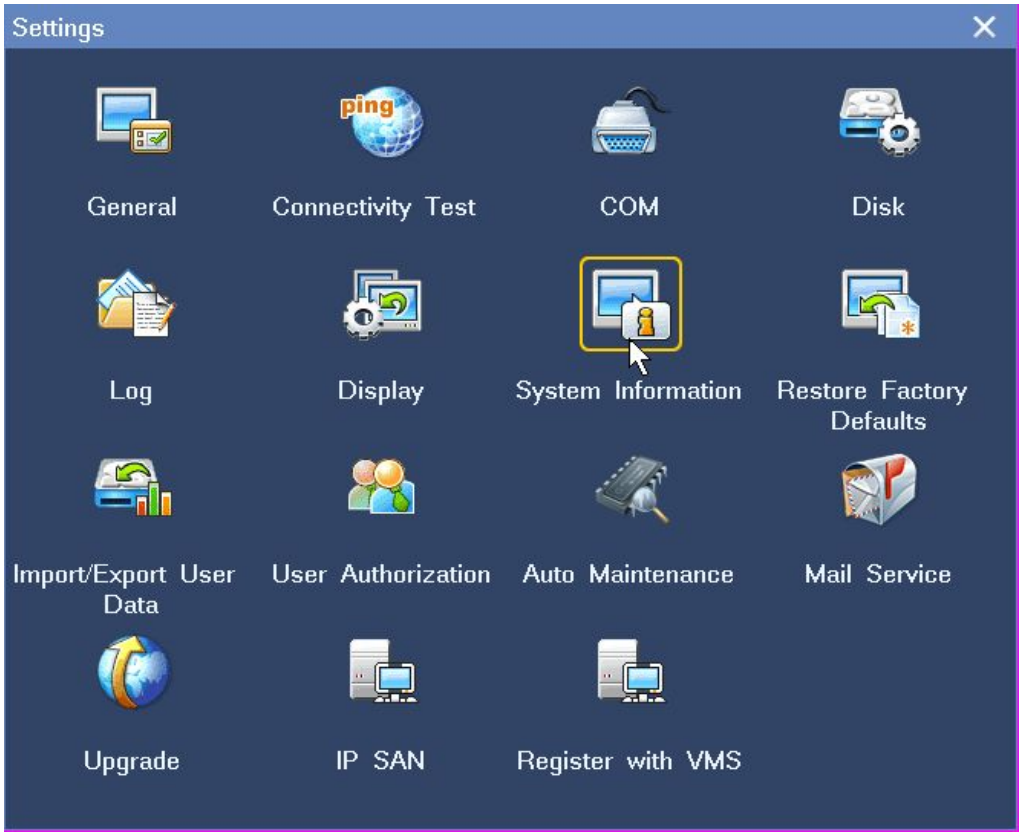
Parameter or Option	Description
Device Name	Name of the NVR
Device Number	Number of the NVR. The default value for this parameter is **8**. You must enter an NVR number before you can use a monitoring keyboard to control the corresponding NVR.

Parameter or Option	Description
	Note that the economic models do not support monitoring keyboards.
Display Language	Display language
Time Zone	Time zone
System Time	System time
Time Elapsed Since Startup	Time elapsed since the startup of an NVR
Automatic Logout	Period after which the current account logs out from an NVR
Viewing Mode	Way of viewing live video. This parameter can be configured as follows: • **Free Mode**: You can choose a screen layout. • **Page Mode**: The screen layout is unconfigurable.
Window Transparency	Transparency of view windows
Record Unit Size	Size of a record unit. This parameter can be configured as follows: • **1**: 64 MB • **2**: 128 MB • **3**: 256 MB • **4**: 512 MB • **5**: 1024 MB • **6**: 2048 MB
Record Download Speed	Rate at which records are downloaded
Enable the operation password	When this option is selected, the password is required if you want to manage disks.
Setup Wizard	When this option is selected, the Setup Wizard is evoked every time the NVR restarts.
Adaptive resolution for the secondary stream	When this option is selected, the resolution of the secondary stream is adaptive.

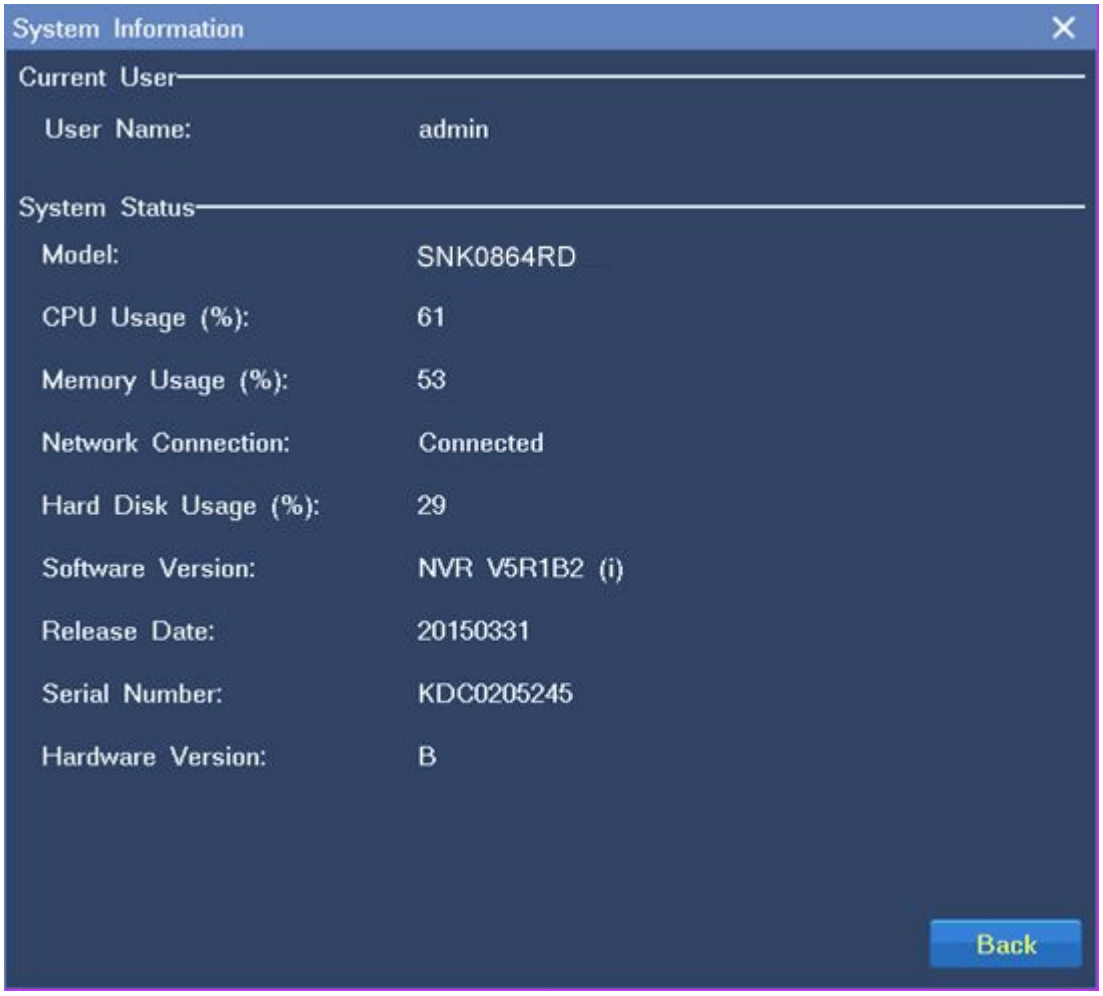
Parameter or Option	Description
Allow ONVIF cameras time synchronization	Whether to allow ONVIF cameras to synchronize the time with the NVR. By default, ONVIF cameras can connect to the NVR.
Resolution for Secondary Stream on ONVIF Camera	Resolution of the secondary stream on an ONVIF camera
Disable the secondary screen	Whether to disable the secondary screen. This parameter is available only to NVRs that support more than 32 cameras.

7.2 Querying the System Information

Choose **Main Menu** > **Settings** > **System Information** to query the system information, as shown in the following figure.

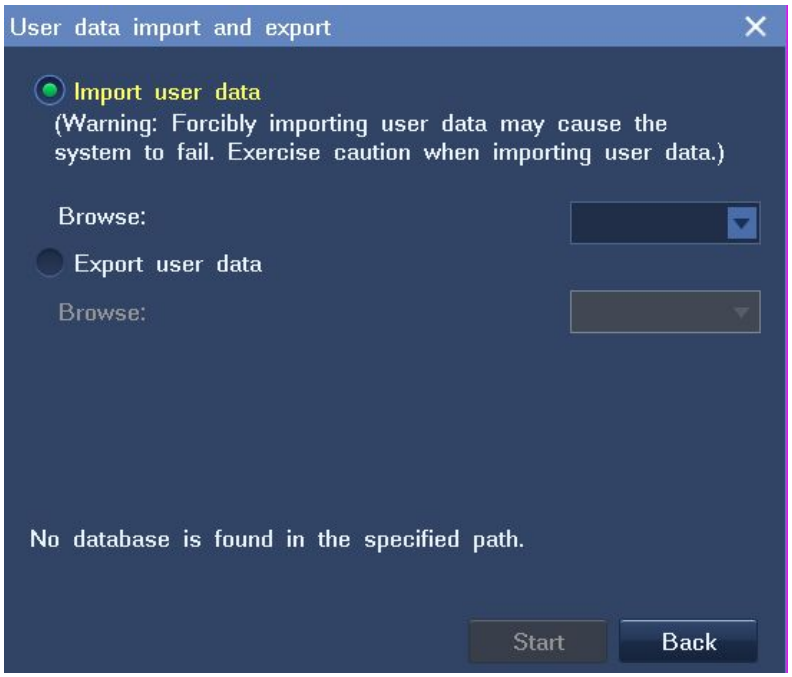


The following is an example.



7.3 Importing or Exporting User Data

Choose **Main Menu** > **Settings** > **Import/Export User Data** to import or export user data, as shown in the following figure.


User data import and export
Import user data
(Warning: Forcibly importing user data may cause the system to fail. Exercise caution when importing user data.)
Browse:
Export user data
Browse:
No database is found in the specified path.
Start
Back

The user data includes the following:

- NVR configurations
- Alarm data
- ANR data
- Tag data

Note

You must insert a USB flash drive before you can import or export user data.

7.4 User Authorization

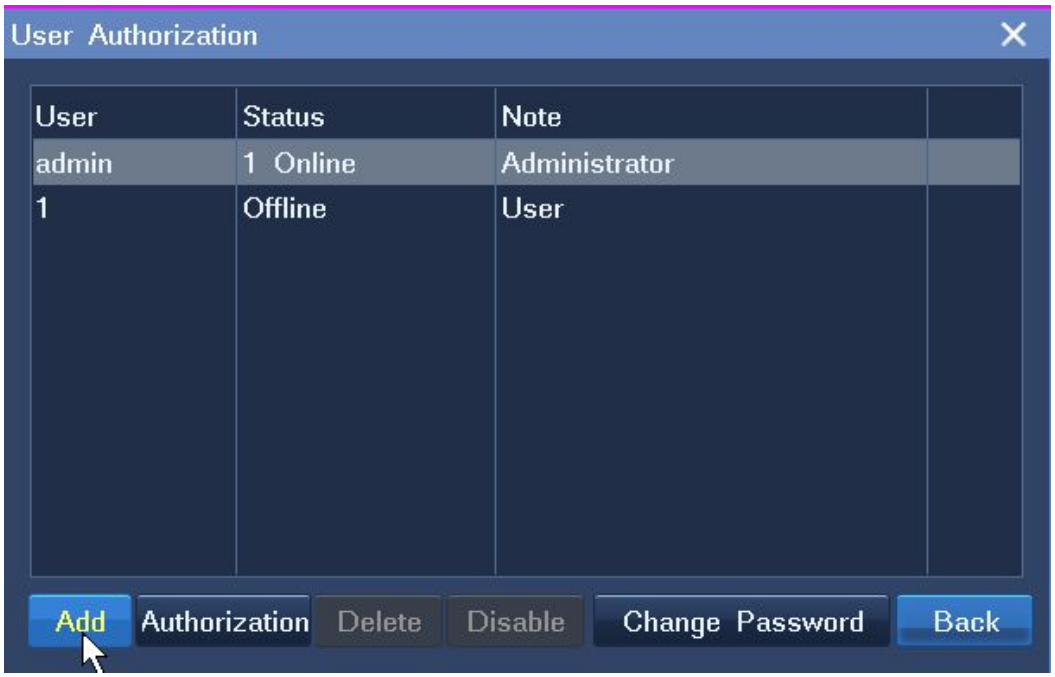
When you are authorized to manage user accounts, you can add, edit, delete, and disable standard users.

When you are not authorized to manage user accounts, you can only query your account's user authorization information and change your account's password.

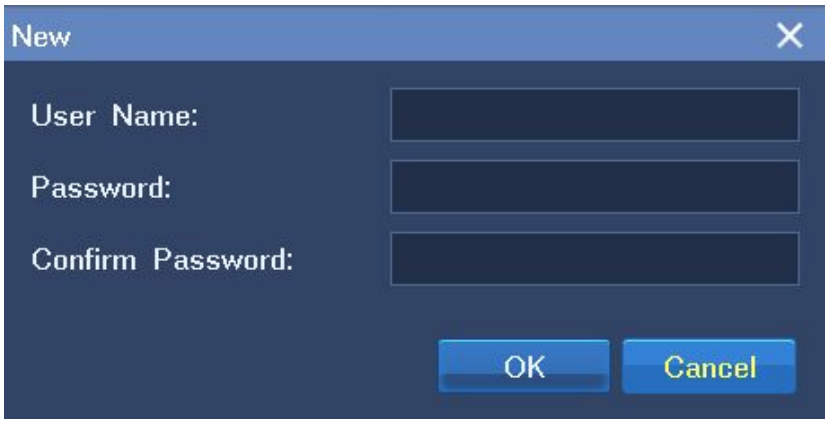
7.4.1 Adding a User Account

To add a standard user:

1. Choose **Main Menu** > **Settings** > **User Authorization** > **Add**, as shown in the following figure.



2. In the displayed **New** dialog box, specify parameters displayed, as shown in the following figure.



3. Click **OK**.

By default, a standard user is allowed to perform the following operations:

- System:
  - Recording and Capturing
  - Configuring System Settings
  - Managing Devices
  - Managing Alarms
  - Configuring Video Wall
- Camera:

- PTZ Control
- Live View
- Playback and Backup

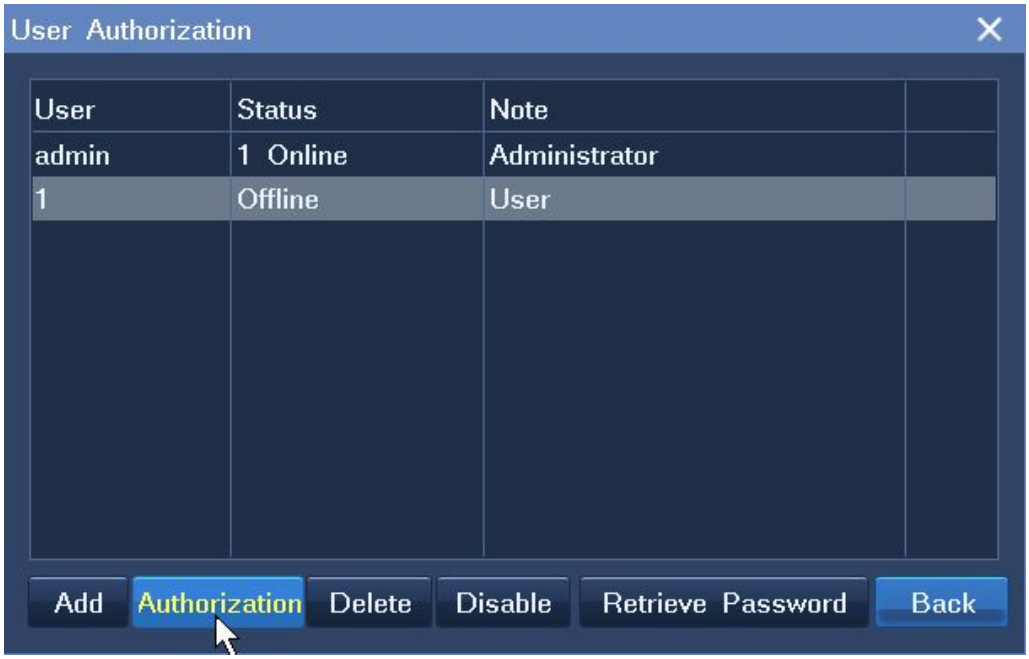
Only the administrator is allowed to perform the following operations:

- Restoring factory defaults
- Import or exporting user data
- Managing disks and configuring IP SAN settings
- Switching off the system
- Rebooting the system

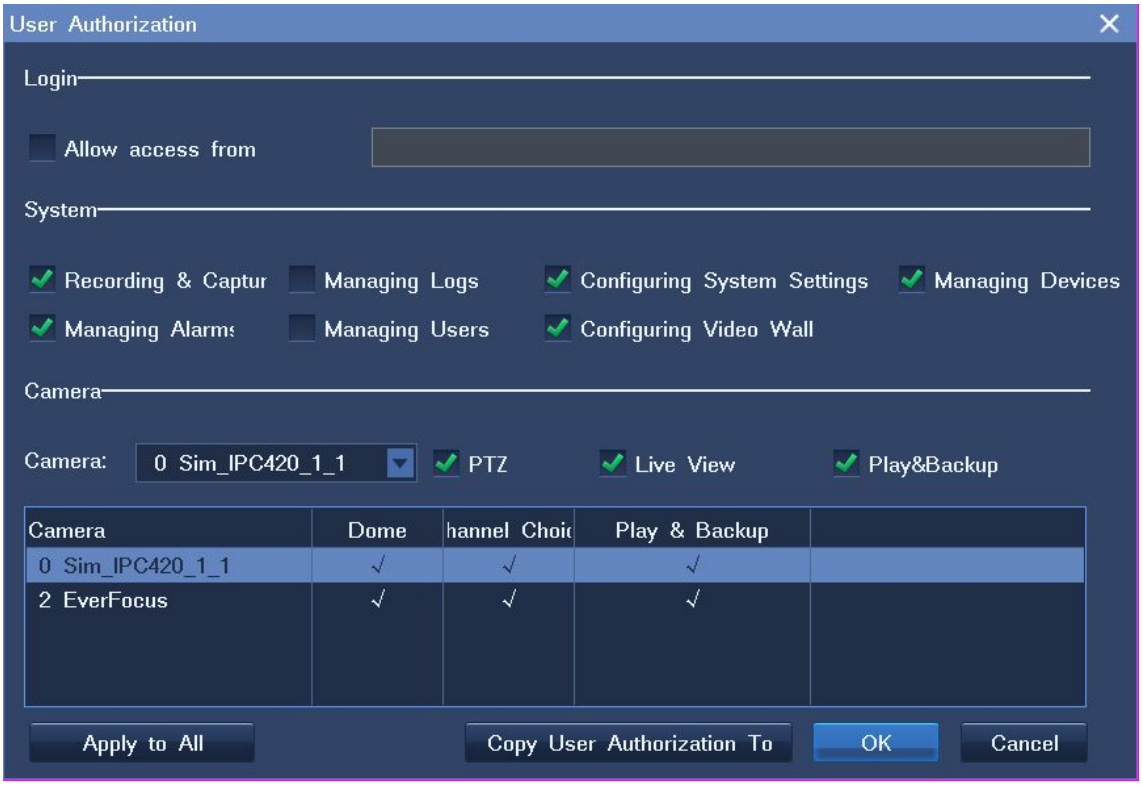
7.4.2 Editing a User Account

To change the user authorization for a standard user:

1. Choose **Main Menu** > **Settings** > **User Authorization**.
2. Select the user from the user account list and click **Authorization**, as shown in the following figure.



3. Specify parameters displayed according to onsite conditions.



You can copy the user authorization of this user to another user by clicking **Copy User Authorization To** or to all users by clicking **Apply to All**.

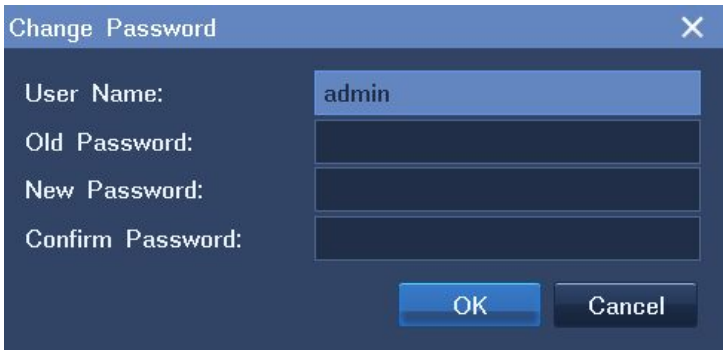
4. Click **OK**.

To retrieve the default password (admin123) for a standard user:

1. Choose **Main Menu** > **Settings** > **User Authorization**.
2. Select the user from the user account list and click **Retrieve Password**.
3. In the displayed dialog box, click **Yes** to confirm your operation.

To change the password of your own account:

1. Choose **Main Menu** > **Settings** > **User Authorization**.
2. Select your account from the user account list and click **Change Password**.
3. In the displayed **Change Password** dialog box, specify parameters displayed, as shown in the following figure.



4. Click **OK**.

7.4.3 Deleting a User Account

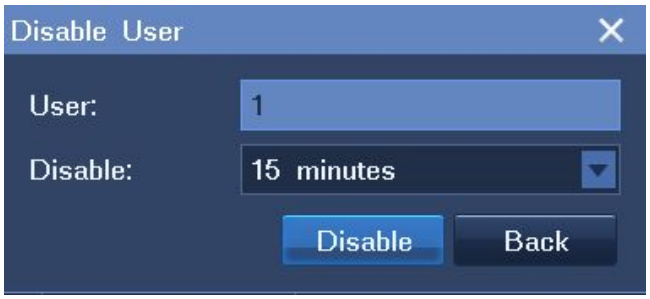
To delete a standard user:

1. Choose **Main Menu** > **Settings** > **User Authorization**.
2. Select the user from the user account list and click **Delete**.
3. In the displayed dialog box, click **Yes** to confirm your operation.

7.4.4 Disabling a User Account

To disable a standard user for a certain period:

1. Choose **Main Menu** > **Settings** > **User Authorization**.
2. Select the user from the user account list and click **Disable**.
3. In the displayed **Disable User** dialog box, select a time length from the drop-down list next to the **Disable** parameter.

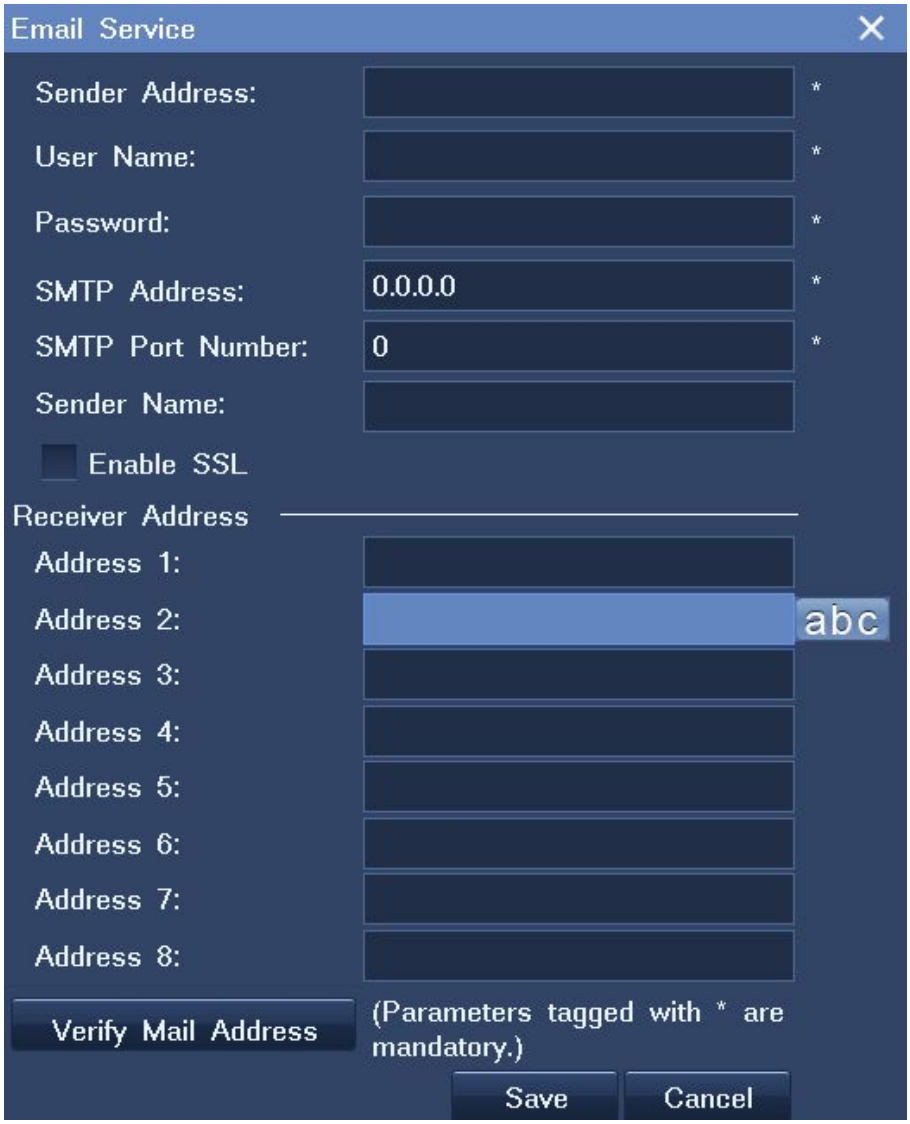


4. Click **Disable**.

7.5 E-Mail Notification

Choose **Main Menu** > **Settings** > **Mail Service** to configure settings for the E-Mail Notification feature,

as shown in the following figure.



7.6 Rebooting the System

To reboot the NVR:

1. Choose **Main Menu** > **Shut Down** > **Reboot**.
2. In the displayed dialog box, click **Yes** to confirm your operation.

7.7 Shutting Down the System

To shut down the system:

1. Choose **Main Menu** > **Shut Down** > **Shutdown**.
2. In the displayed dialog box, click **Yes** to confirm your operation.

7.8 Logging Out from the System

To log out from the system:

1. Choose **Main Menu** > **Shut Down** > **Log Out**.
2. In the displayed dialog box, click **Yes** to confirm your operation.

8 Specifications

The following table lists SNK0800RD variants.

Front Panel	
Sub-model	SNK0816/SNK0832/SNK0848/SNK0864
Channel	16/32/48/64 channels, each of which occupies a bandwidth of 5 Mbit/s
Resolution	QXGA, 1080P, UXGA, 720P, VGA, D1, CIF, QCIF, 1080 x 1920, 960 x 1280, 720 x 1280, 576 x 704, 400 x 704, 288 x 353, 256 x 352
Supported RAID protocols	RAID 0, 1, 5, 6, 10
Number of disks allowed to be installed	8
Maximum number of view windows	35
Video decoding	H.264 (baseline/main/high profile)
Audio	RCA line in and RCA line out (support for bidirectional audio transmit)
Audio encoding and decoding	Encoding: ADPCM Decoding: ADPCM, AACLC, G.711U, G.711A, AMR
Network protocols	TCP/IP, UDP, RTP/RTCP/RTSP, FTP, Telnet, SNTP, HTTP, DHCP, DDNS
Video out	1 HDMI (maximum resolution 1920 x 1080), 1 VGA (maximum resolution 1920 x 1080)
Alarm in/out	2 alarm inputs and 2 alarm outputs

Control ports	2 RS485 ports
Disk ports	8 SATA ports and 1 eSATA port
Network ports	2 RJ45 ports, 100Base-TX/1000Base-T, adaptive
USB ports	4 USB2.0 ports
Power	100 V AC to 240 V AC
Operating frequency	50 Hz to 60 Hz
Rated power	< 40 W (excluding disks)
Operating temperature	-10°C to 55°C
Relative humidity	10% to 90% (non-condensing)
Atmospheric pressure	70 kPa to 106 kPa
Altitude	-60 m to 3000 m
Size (height x width x depth)	88 mm x 430 mm x 561 mm
Weight	12.5 kg (excluding disks)
Connection	128 such NVRs can connect to the NVR Station.

The following table lists SNK1600RD variants.

Front Panel	

Sub-model	SNK1632RD/SNK1664RD/SNK16128RD
Channel	32/48/64/128 channels, each of which occupies a bandwidth of 5 Mbit/s
Resolution	QXGA, 1080P, UXGA, 720P, VGA, D1, CIF, QCIF, 3840 x 2160, 1920 x 1080, 960 x 1280, 720 x 1280, 576 x 704, 400 x 704, 288 x 353, 256 x 352
Supported RAID protocols	RAID 0, 1, 5, 6, 10
Number of disks allowed to be installed	16
Maximum number of view windows	64
Video decoding	H.264 (baseline/main/high profile)
Audio	RCA line in and RCA line out (support for bidirectional audio transmit)
Audio encoding and decoding	Encoding: ADPCM Decoding: ADPCM, AACLC, G.711U, G.711A, AMR
Network protocols	TCP/IP, UDP, RTP/RTCP/RTSP, FTP, Telnet, SNTP, HTTP, DHCP, DDNS
Video out	• Primary HDMI ➢ Maximum resolution: 3840 x 2160 ➢ Minimum resolution: 1024 x 768 • Secondary HDMI and VGA ➢ Maximum resolution: 1920 x 1080 ➢ Minimum resolution: 1024 x 768
Alarm in/out	2 alarm inputs and 2 alarm outputs
Control ports	2 RS485 ports
Disk ports	16 SATA ports

Network ports	3 RJ45 ports, 100Base-TX/1000Base-T, adaptive
USB ports	2 USB2.0 ports and 2 USB3.0 ports
Power	100 V AC to 240 V AC
Operating frequency	50 Hz to 60 Hz
Rated power	< 120 W (excluding disks)
Operating temperature	-10°C to 55°C
Relative humidity	10% to 90% (non-condensing)
Atmospheric pressure	70 kPa to 106 kPa
Altitude	-60 m to 3000 m
Size (height x width x depth)	156 mm x 483 mm x 500 mm
Weight	< 20 kg (excluding disks)
Connection	128 such NVRs can connect to the NVR Station.

9 Abbreviations and Acronyms

ANR	automatic network replenishment
DHCP	Dynamic Host Configuration Protocol
LAN	local area network
NVR	Network Video Recorder
ONVIF	Open Network Video Interface Forum
OSD	on-screen display
RTSP	Real Time Streaming Protocol
WDR	wide dynamic range